VICON

Software Guide

XX263-00-00

V9360 Series
Network Hemispheric Camera

CE FC

Vicon Industries Inc., 89 Arkay Drive, Hauppauge, New York 11788
Tel: 631-952-2288 Fax: 631-951-2288 Toll Free: 800-645-9116
24-Hour Technical Support: 800-34-VICON (800-348-4266) UK: 44/(0) 1489-566300

Vicon Industries Inc. does not warrant that the functions contained in this equipment will meet your requirements or that the operation will be entirely error free or perform precisely as described in the documentation. This system has not been designed to be used in life-critical situations and must not be used for this purpose.

www.vicon-security.com

Document Number: 8009-8263-00-00 Issued: 413
Product specifications subject to change without notice.
Copyright © 2013 Vicon Industries Inc. All rights reserved.

Table of Contents

1. Recommended PC Specification 4

2. Preparation before setup 5

Connect to device and setup IP **5**
Sample screenshots to setup IP of your PC (Win XP) **7**

3. Configuring the IP device 11

Login **11**
Live view **12**
Zoom Lens Control Panel **15**
Setup Menu **17**
Host **18**
Date & Time **19**
Network Section **21**
IP Address Filtering 21
Port Mapping 23
ToS 25
UPnP™ 26
Bonjour 26
HTTPS 27
IEEE 802.1X 28
SNMP Setting 28
RTP 29
Speed & Duplex 30
IP Settings **31**
Connection Type 31
DNS 32
DDNS 33
Video & Audio **34**
Camera Options 34
Compression 39
Motion Detection 42

Image 44
Day/Night 45
White Balance 46
Audio 47
OSD/Privacy Mask 48
Event 50
Event Server 50
Event Configuration 53
Event List 60
Manual Event 64
Local Storage Management 65
Status 66
Utilities 67
Setup 72
File Management 73
Event Handler with Local Storage 78
System 84
User Account 84
System Info 85
Factory Default 86
Firmware Upload 87
Save & Reboot 88
Logout 88
Appendix A 89

1. Recommended PC Specification

CPU	Intel® Core™2Duo 2.13GHz and above
Memory	2 GB or above
Operating System	Windows® XP with SP2 or above/Windows Vista/Windows 2003/Windows 7/Windows 2008 Internet Explorer® 8.0/Internet Explorer 9.0 (32-bit)
Video Resolution	SVGA or XGA with 1024x768 resolution

2. Preparation before setup

Connect to device and setup IP

The V9360 IP device is accessed through Internet Explorer. The IP address for your PC must be within the same subnet as the IP device. You need to match the TCP/IP settings between PC and IP device before you can access it via Internet Explorer.

There are two ways to add devices to the network.

With DHCP server/router:

A DHCP server assigns IP addresses to devices automatically. You can find them on the network with the *IP Utility* available on our website, www.vicon-security.com.

Run IP Utility to start auto device search. Click on the underlined IP links to access your IP devices. You do not need to change the IP address.

Without DHCP server/router:

Assign a static IP for each device and add them one by one. Connect to the first device by following steps 1 to 5 below.

Before adding more devices to the network, change the current device to a new IP address so that no two devices have the same IP, which would be a conflict. (steps 6 to 9).

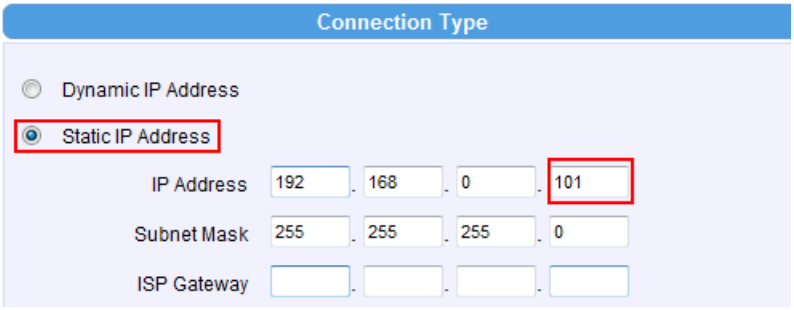
For adding devices without DHCP, use the following steps:

1. Connect the PC to the Network Switch with the CAT5 cable and change your PC's IP to 192.168.0.101/Subnet Mask 255.255.255.0 (101 is just a sample, it may be any number from 1 to 254 except 100.)
2. Connect the device to your Network Switch. If it is a PoE enabled switch, the device is powered on. If it is NOT a PoE enabled switch, also plug in the Power Adapter.
3. Open Internet Explorer and type in the Default IP:

   http://192.168.0.100
4. The login window will display; enter the default user name and password:

   Default User name: Admin Password: 123456

5. After logging in, the video from IP device will display. To go to the main menu, click the Setup button on the top left.
6. Go to IP settings -> Connection Type. Change the IP mode to Static and the IP address to 192.168.0.101 or any other unused IP (avoid 192.168.0.100, the IPs of your PCs and other devices already in network.). Click Apply and then click System -> Save & Reboot.



7. Internet Explorer will close after a few seconds. This is normal.
8. Wait for 30 seconds and open Internet Explorer again by typing in the *new IP* (in this example, 192.168.0.101). For additional devices added to the network, remember to choose an IP that is not used by any existing device.
9. If you have more than one device, continue again from step 2. Assign a different new IP to each camera (for instance -> 192.168.0.102, 192.168.0.103 …). It is not necessary to unplug the existing devices from the switch because there is no IP conflict.

Sample Screenshots to Setup IP of PC (Windows XP)

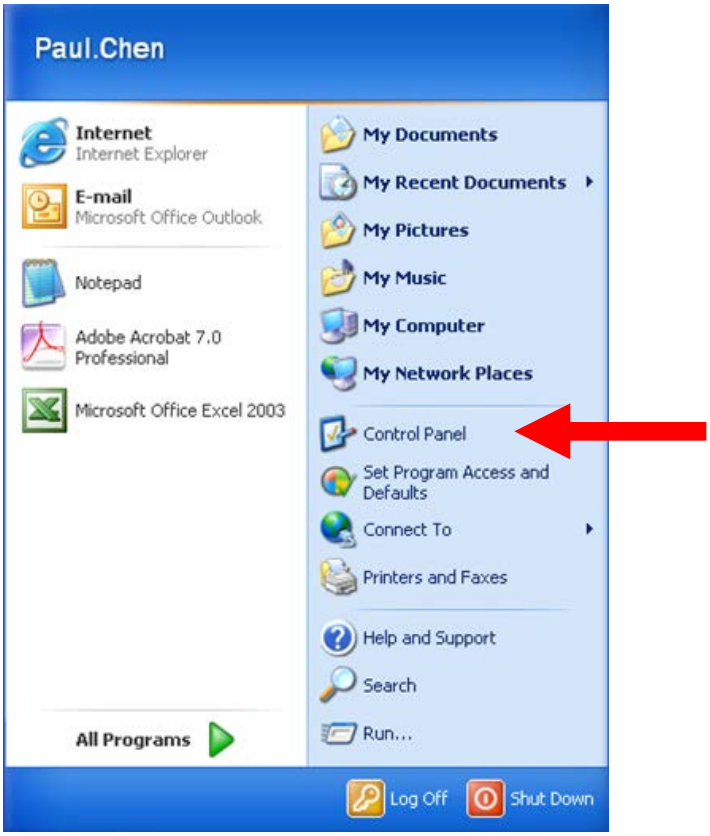
The procedures below show how to setup your IP on Windows XP. If you are using operating system other than Windows XP, refer to the OS manuals for proper setup procedures; the procedure will be similar.

STEP 1

Start up your PC.

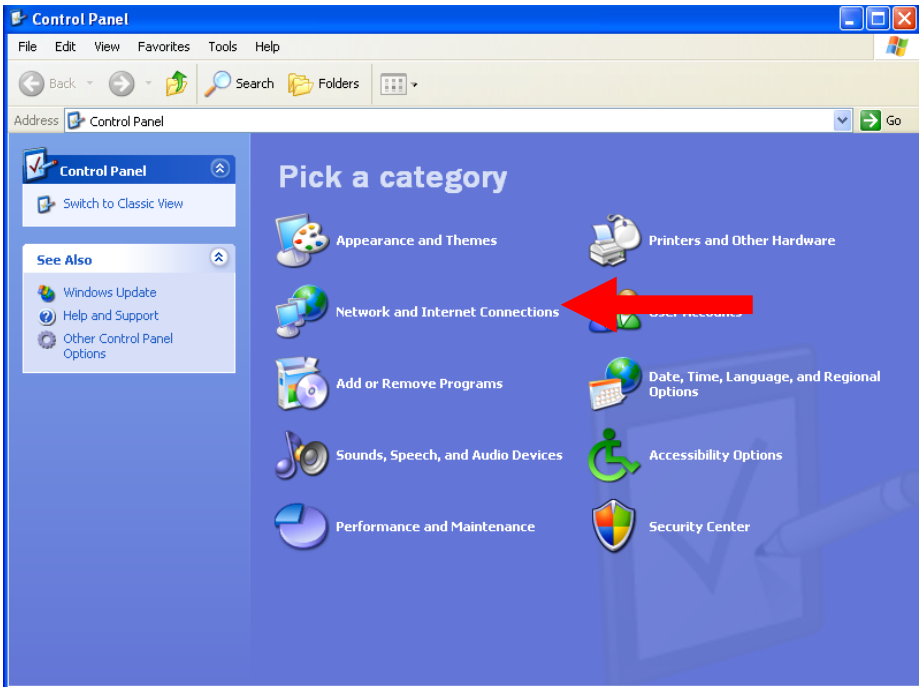
STEP 2

Click [Start] and select the Control Panel.



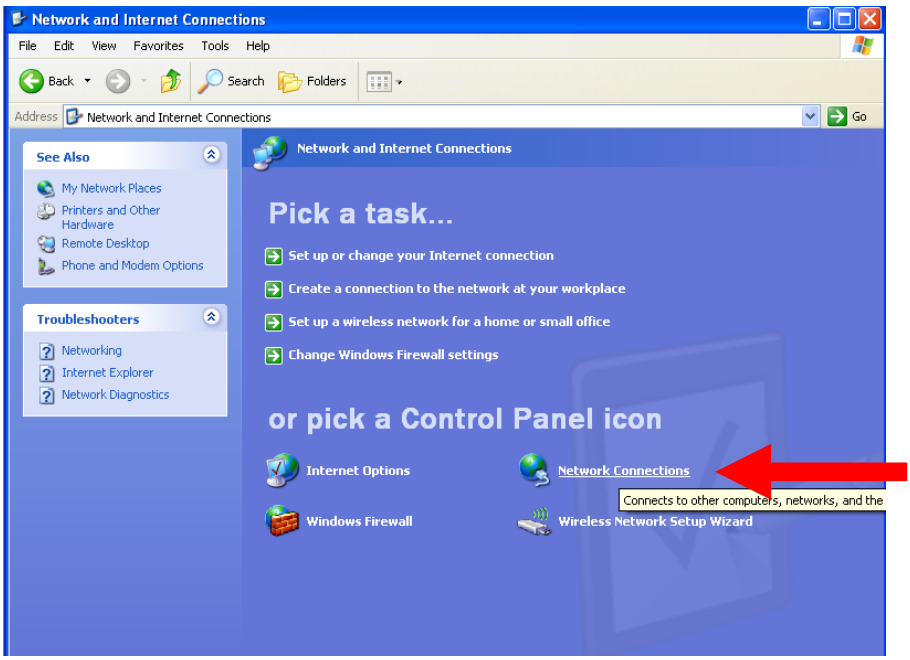
STEP 3

Double-click the Network and Internet Connections icon.



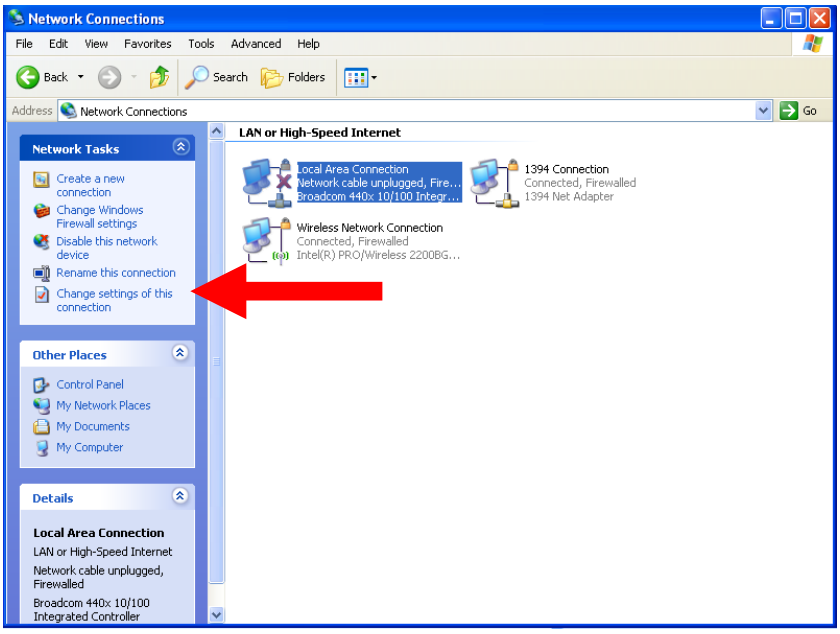
STEP 4

Double-click the Network Connections icon.



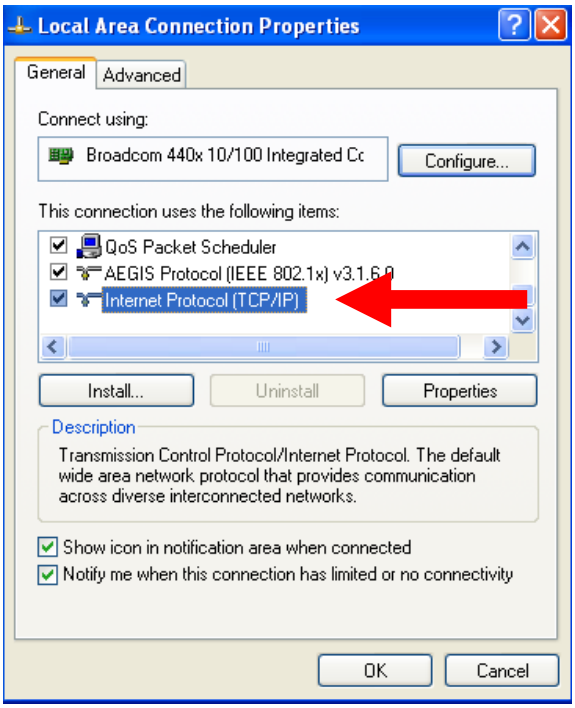
STEP 5

Click Local Area Connections and then click Change settings of this connection in the Network Task menu.



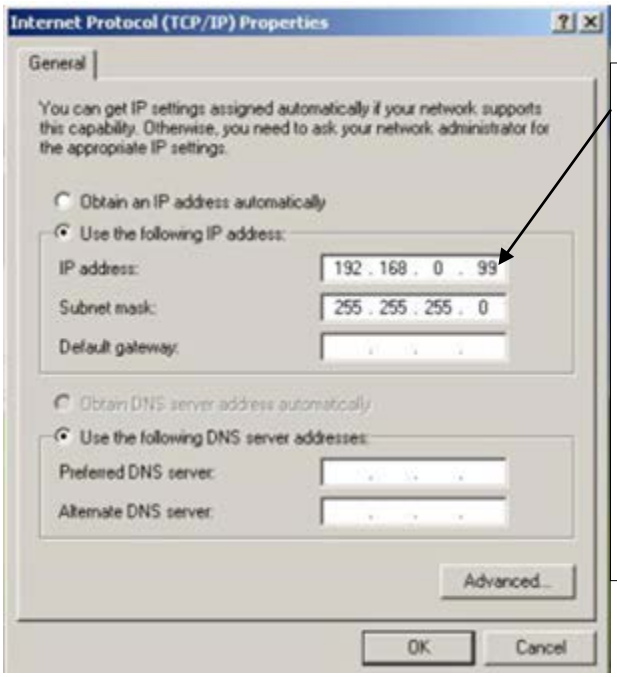
STEP 6

Click Internet Protocol (TCP/IP) and then click Properties.



STEP 7

Click the Use the following IP address radio button and enter the IP address and the subnet mask.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 99
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Enter the settings as below.

IP address: 192.168. 0.xxx

Subnet mask: 255.255.255. 0

(**NOTE**: xxx should be a number from 1 to 254 except 100, which is used by the IP device. Also make sure that no two devices use the same IP address in the same network.)

STEP 8

Click the OK button; the dialog box will close.

3. Configuring the IP device

This section describes how to configure the IP device. The administrator has unlimited access to all settings, while the normal user can only view live video. The IP device is configured under a standard browser (Microsoft® Internet Explorer 8.0/9.0).

Note that, depending on the firmware of the camera, some of the screens shown in this manual may look slightly different than those that display on your particular unit, but functionality should be the same or similar. Refer to the Vicon website, www.vicon-security.com, to be sure you have the most up-to-date manual.

Login

STEP 1

Open Internet Explorer 8.0/9.0. You may download the latest version from:

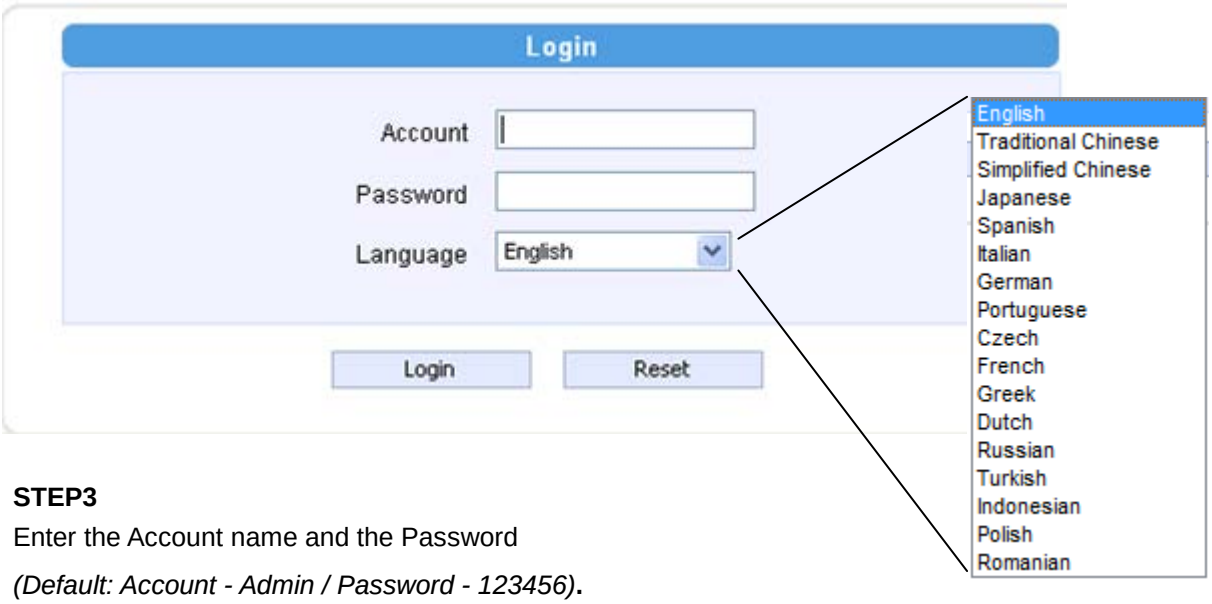
http://www.microsoft.com/windows/ie/downloads/default.mspx

(For Internet Explorer 10.0, enable "Compatibility View" on the Tools menu in Internet Explorer browser)

STEP 2

Enter the IP address of the IP device and press enter to go to Login page.

The default IP address is *192.168.0.100*.



STEP3

Enter the Account name and the Password

(Default: Account - Admin / Password - 123456).

STEP 4

Select the language of the IP device user interface.

You can select from English, Traditional Chinese, Japanese, Spanish, Italian, German, Portuguese, Greek, Russian, Turkish, Indonesian and Swedish. This user interface setting will disappear once you log out; if you want to change the default user interface language, go to [Host] in the Host section under the Setup tab.

STEP 5

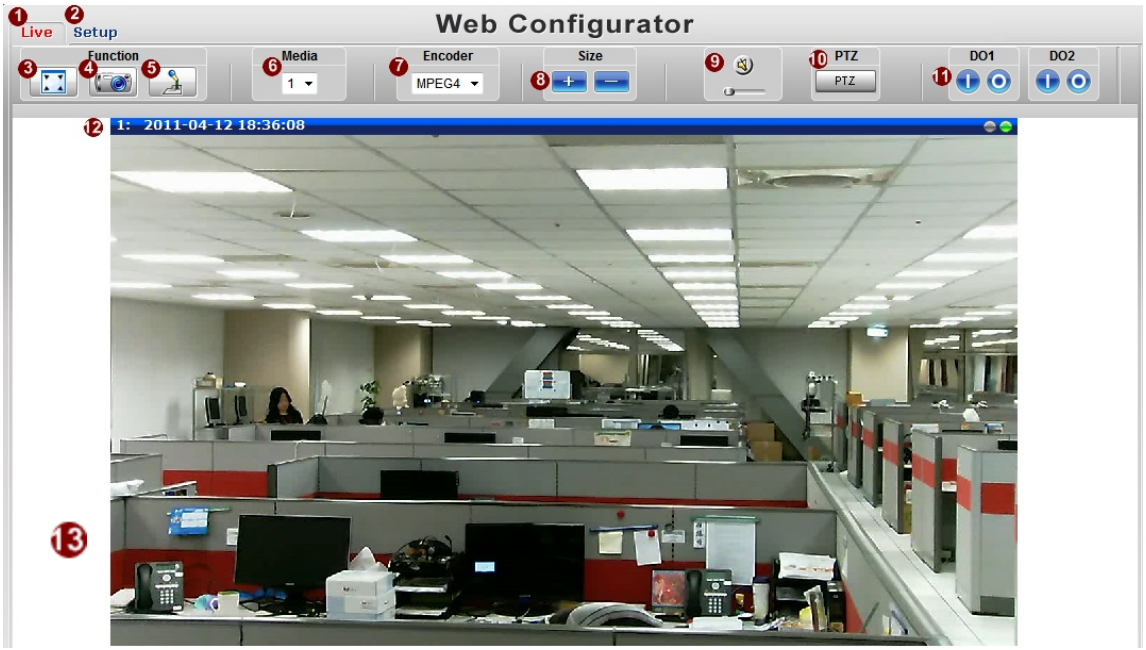
Click the Login button to login or click the Reset button to re-enter.

Once you've logged in, the Live page will be displayed as below.

Live View

Click the ❶ [Live] tab to show the Live Video page. Refer to the table below for how to configure each setting.

Note that the camera the features and function offered on the Live page depend on the Stream Mode selected on the Video & Audio setup page. Additionally, depending on the VMS being used, some of these features may not work. When using ViconNet VMS, the single stream is supported as it is setup in the camera and cannot be changed (typically two 180° views); the ePTZ feature cannot be used with ViconNet.



Function List

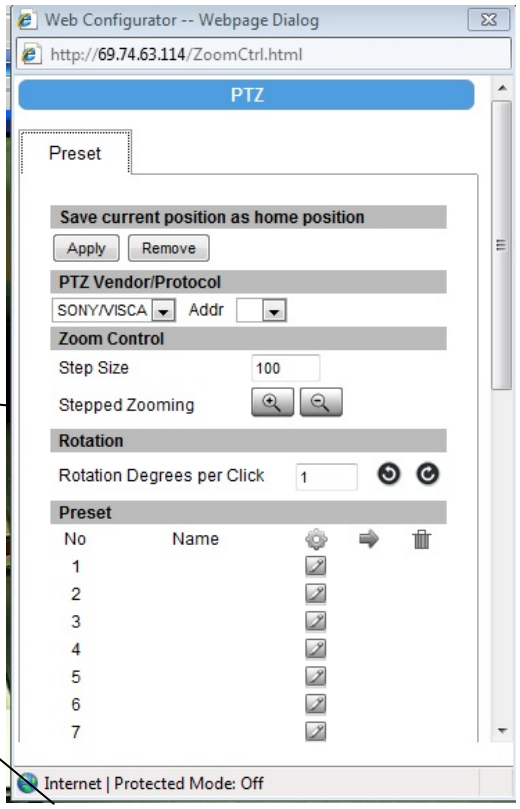
Function	Description
❸ Full Screen	Click the icon to stretch the preview to full screen. You can click Esc button on the keyboard to return to previous display.
❹ Snapshot	Click the icon " " to take a snapshot. The snapshot picture will be saved to the default folder "C:\Users\"account name"\Picture" in the format of YYYYMMDD_HH_mm_ss.jpg.
❺ Audio out	Click the icon to enable the audio out from PC to IP camera or video server. When it is enabled, your voice will be transferred to the audio out of the IP camera or video server. NOTE: A microphone must be connected to your PC to send out audio.
❻ Media	If dual stream mode is enabled, click ❻ to select which stream to display (Media 1 or 2). The default is single stream only. To change to dual stream mode, refer to Media 1 section under Setup tab
❼ Encoder Type	Click ❼ to select the compression codec used in video encoding. The Encoder type option includes MPEG-4, M-JPEG and H.264. Once selected, the video server/IP camera will start to send video in the new stream type.
❽ Display size	Click or to adjust display screen size
❾ Audio in	Click the speaker icon to toggle mute/audio in. Click and drag the slider to adjust volume. Enable audio must be selected in settings before anything can be changed here.
❿ PTZ Panel	Click on the PTZ button to pop up the Control Panel to enable mouse PTZ. Zoom lens, panning and tilting via PTZ platform will only be activated by mouse PTZ command. *Note: This is not available in 4 cropped VGA mode.
⓫ DO Settings	Click to set DO output level to High. Click to set DO output level to Low. If your device has more than one DO available, each DO is controlled separately.

12 Network Status	indicates the network state. If the light on the right is green, the network is OK. If the light is gray, the network is broken. The light on the left is not used.
13 Live View	Live view from camera is displayed here. The title bar shows the time and date.

To setup this IP camera/video server, click 2 [Setup] tab to switch to Setup page.

Zoom Lens Control Panel

When Stream Mode is set to ePTZ, this screen is available by clicking on the PTZ button in the Live View screen.



Change the current zoom ratio by clicking on the Stepped Zooming button. Step size will determine how much each click on stepped zooming changes the zoom ratio. The view can be rotated by clicking on the rotation symbols; the amount of rotation of each click can be defined by changing the Rotation Degrees per Click field.

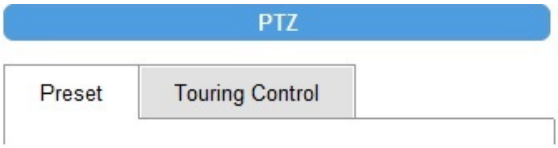
You can configure up to 32 presets. Click Edit icon to enter a name; click the Set icon and then move the camera to desired position and then click Set icon again. Now the camera can go directly to that position by clicking on the Goto icon button (Edit button must not be highlighted). The preset position can be changed by selecting the Edit icon.

Click Delete icon to remove this preset point from camera memory.

In this mode, the cursor becomes a red plus sign that can be used to pan, tilt and zoom into the image.

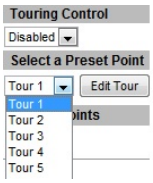
Preset Tour

After the Presets are set, the Tour function will be enabled.



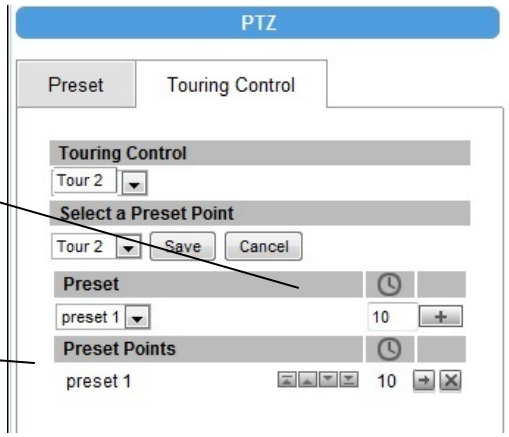
A Preset Tour is a preconfigured PTZ sequence that directs the camera to cycle through multiple preset PTZ views, including where to look and how long to look at each location. Refer to the previous Preset section to configure the presets. Make sure the ePTZ and PTZ Preset sections are configured correctly before setting up Preset Tours.

Select the tour you want to use or choose "Disable" to stop Preset Tour.



Selet the Preset to add to the tour. Setup how long the camera stays at each point by settng the [Dwell Time]. Then, click [Add] button to add the preset to this tour.

The preset sequence can be rearranged.
Click the buttons to move to top, move up, move down or move to bottom of list.



Click [Goto] to go to the preset point and click [Remove] to remove this preset point in this modified tour.

Click the Save button to save the tour settings or the Cancel button to revert to previous settings.

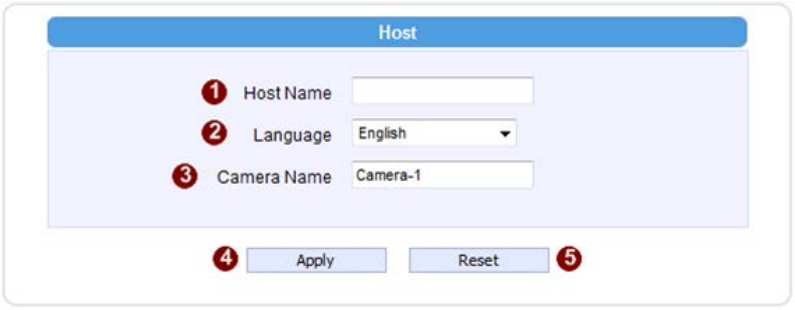
Setup Menu

Click the Setup tab on the Live View page; the Setup page will display. The left side is devoted to the menu.

There are many sections in the menu, most of them hidden for ease of navigation. The fully expanded menu is shown here to the right.

Host

Click the [Host] item to enter Host page. Refer to the table below to see how to configure each setting.

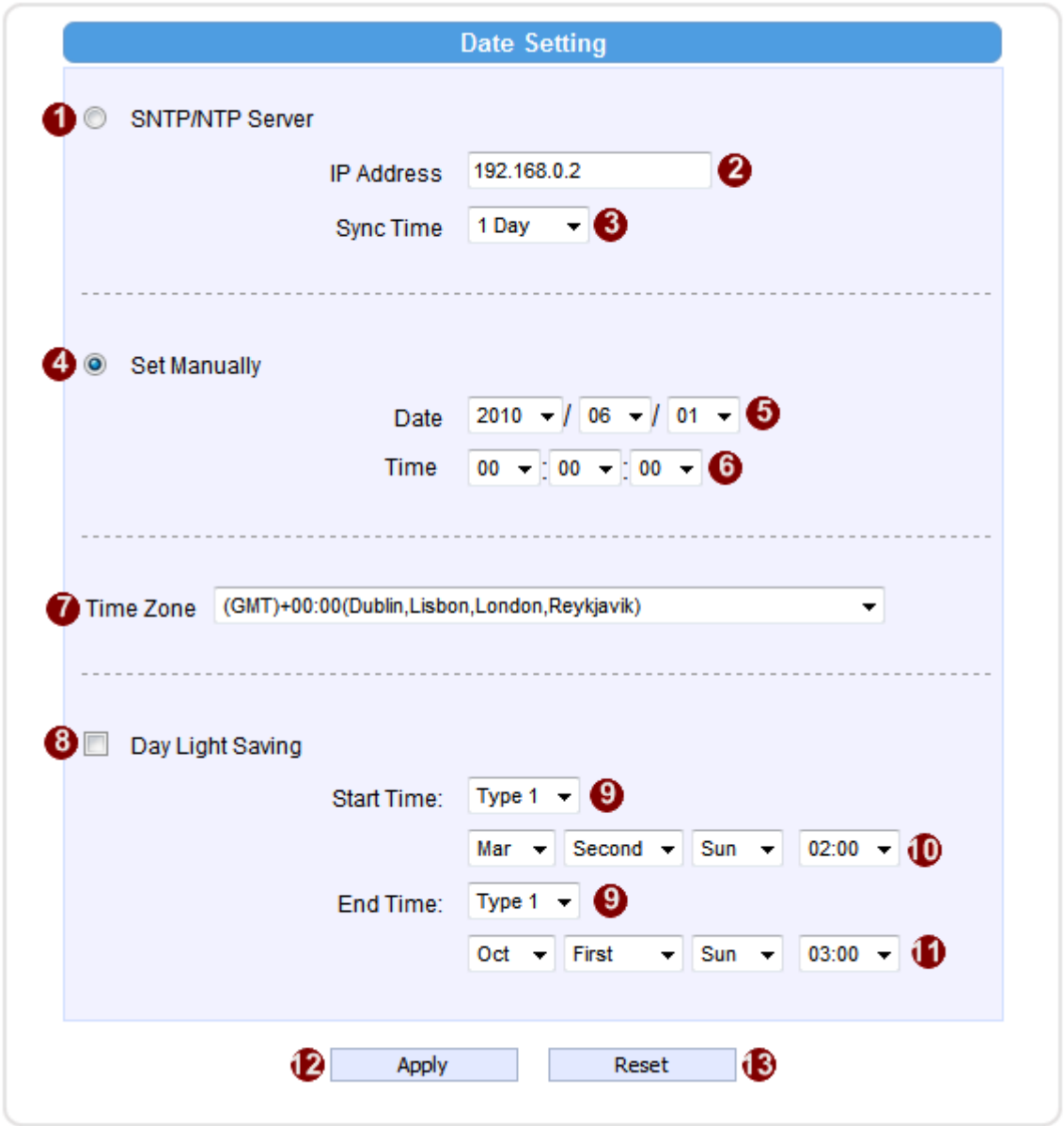


Parameters	Description
1 Host name	Enter a host name; this host name will be shown when you use the IP utility or the SDK to search for the IP device. This is the camera's name in the Site List of ViconNet.
2 Language	Select the language of the default user-interface. Each user login will see the default user-interface first.
3 Camera name	The camera name allows the user to choose a specific name for the camera.

Click the 4 [Apply] button to confirm the settings or click the 5 [Reset] button to re-enter the parameters.

Date & Time

Click the [Date & Time] item in the Setup tab to display the Date Setting page. Refer to the table below for how to configure each setting. The default method is Set Manually.



Parameters	Description
❶SNTP/NTP Server	Select this to enable IP device's SNTP/NTP function. This enables this IP device to synchronize its time settings with an SNTP/NTP server. Use this function to make sure the time on all your IP devices is the same. Additionally, the embedded digital-time-code in the streaming provides an accurate event sequence. ❷ **IP address**: Enter the IP address of the SNTP/NTP server. ❸ **Sync time**: Select the time interval for this IP device to synchronize its time.
❹ Set Manually	Select this to manually setup the date and time. ❺ **Date** : Select the date ❻ **Time**: Select the time
❼ Time Zone	Select the time zone for local settings from the list provided
❽ Day Light Saving	Select Type 1 ❾ to specify daylight saving time by week number in a month; select Type 2 to specify daylight saving time by date. ❿ **Start Time**: Select the daylight saving start time. ⓫ **End Time**: Select the daylight saving end time.

Click the ⓬ [Apply] button to confirm the settings or click the ⓭ [Reset] button to re-enter the parameters.

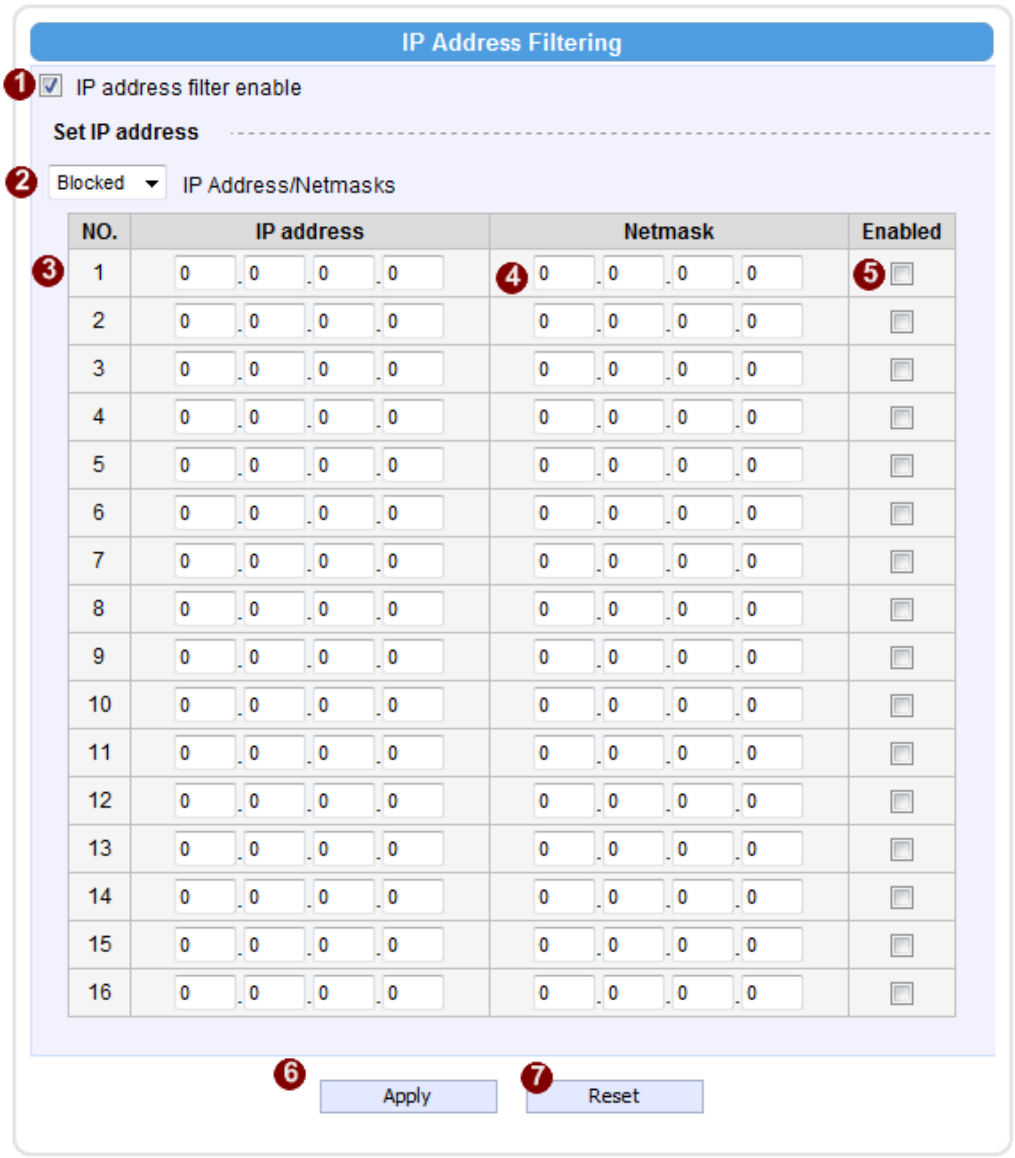
Network Section

Click the [+] [Network] item on the Setup menu to reveal the submenus.

IP Address Filtering

WARNING: Be very careful when using this function, as access to the camera can be lost if mistakes are made in setup. Typical errors include accidentally denying yourself access or forgetting to include your own IP address in the allowed address list. A hard reset will then need to be performed to be able to access the device again.

Click the [IP Address Filter] item to display the IP Address Filtering page. Check Enabled and the following screen displays. Refer to the table below for how to configure each setting.

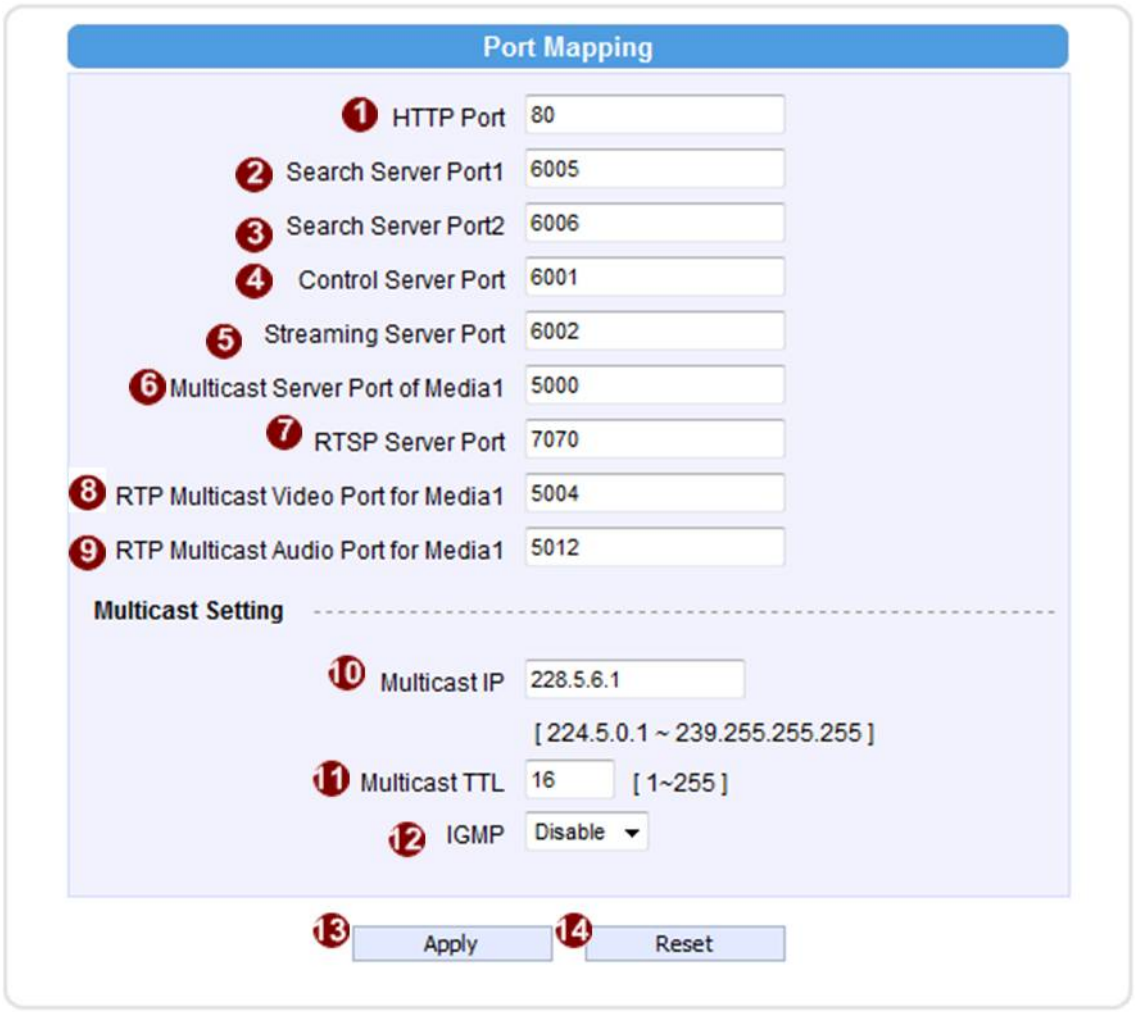


Parameters		Description
❶	IP address filter enable	Check this box to enable IP Address Filtering.
❷	Filter Method	The filter can be set in either Allow mode or Blocked mode. 1. Allow mode will refuse access to all IP addresses except the ones listed below. 2. Blocked mode will accept all incoming access except the IP addresses listed below. Make sure you include the Netmask when considering this option.
❸	IP Address	The IP address to allow or block. Note that the actual range is modified by the Netmask.
❹	Netmask	Using Netmask allows you to set filtering for a whole range of IP addresses at once, without the need to enter all of them individually. If you are not sure about the function of netmask, use 255.255.255.255, and it will only affect a single IP address per line of entry, or use 255.255.255.0 to use the same setting for all IP addresses starting with the same three numbers. .
❺	Enabled	Each entry must have its individual check box selected for it to be effective. For an entry that is no longer needed but do not want to delete, uncheck it and the system will remember it for future use. If a new entry that has never been used before does not have Enabled checked, it will not be stored in memory.
❻	Apply	Click this to use the currently displayed info to do IP Address filtering. If setup correctly, it will change into a grayed out Success in a few seconds.
❼	Reset	Click this button to re-enter the parameters.

Click the ❻ [Apply] button to confirm the settings or click the ❼ [Reset] button to re-enter the parameters.

Port Mapping

Click the [Port Mapping] item to display the Port Mapping page. Refer to the table below for how to configure each setting. New settings will only take effect after a Save & Rebbot.


Port Mapping
1 HTTP Port 80
2 Search Server Port1 6005
3 Search Server Port2 6006
4 Control Server Port 6001
5 Streaming Server Port 6002
6 Multicast Server Port of Media1 5000
7 RTSP Server Port 7070
8 RTP Multicast Video Port for Media1 5004
9 RTP Multicast Audio Port for Media1 5012
Multicast Setting
10 Multicast IP 228.5.6.1
[224.5.0.1 ~ 239.255.255.255]
11 Multicast TTL 16 [1~255]
12 IGMP Disable
13 Apply
14 Reset

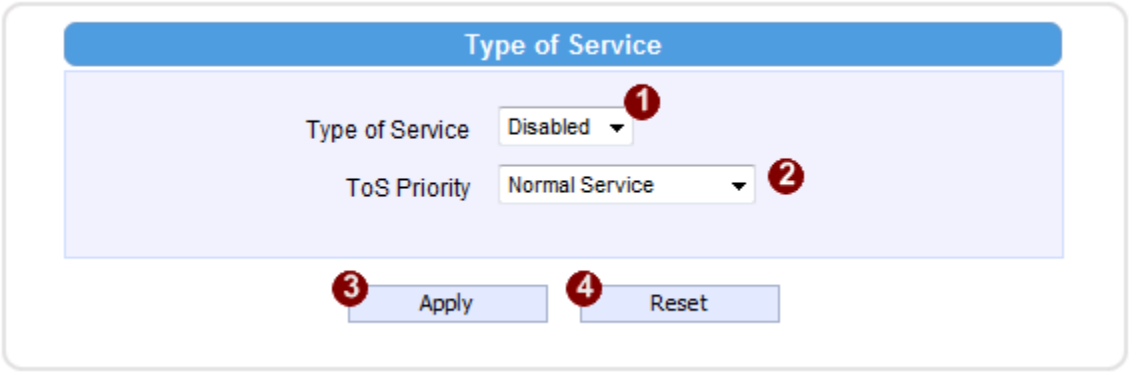
Parameters	Description
1 HTTP Port	Select the port assigned for HTTP protocol access
2 Search Server Port1	Select the first port used by server search applications to detect this IP device. (e.g., IP Utility)
3 Search Server Port2	Select the second port used by server search applications to detect this IP device. (e.g., IP Utility)
4 Video Server Port	Select the port used to support video control function by application programs. (e.g., NVR)

❺ Streaming Server Port (TCP Only)	Select the port used by this IP device for video streaming
❻ Multicast Server Port of Media 1	Enable/disable multicast audio streaming
❼ RTSP Server Port	Select the port assigned for RTSP protocol access
❽ RTP Multicast Video Port for Media1	Select the port for the multicast video streaming of media1 via RTP protocol
❾ RTP Multicast Audio Port for Media1	Select the port for the multicast audio streaming of media1 via RTP protocol
❿ Multicast IP	Select the multicast IP. Default settings is 228.5.6.1
⓫ Multicast TTL	Select the multicast TTL. Default setting is 255.
⓬ IGMP	Select video type connected to the video-in of this IP device. If you use an incorrect video type, some images might be lost.

Click the ⓭ [Apply] button to confirm the settings or click ⓮ the [Reset] button to re-enter the parameters.

ToS

Click the [ToS] (Type of Service) item to display the ToS page. Refer to the table below for how to configure each setting.

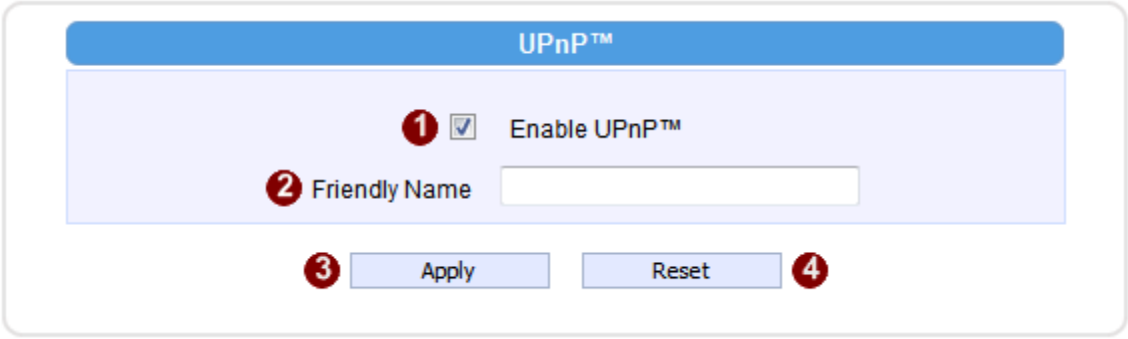


Parameters		Description
1	ToS (Type of Service)	Select whether to add the ToS tag onto the streaming data. Streaming data with a higher priority ToS tag will be transmitted first when compared with other data.
2	ToS Priority	Select the ToS tag's priority to be added onto the streaming. Select from: 1. **Minimize Delay** 2. **Maximize Throughput** 3. **Maximize Reliability** 4. **Normal Service**

Click the 3 [Apply] button to confirm the settings or click the 4 [Reset] button to re-enter the parameters.

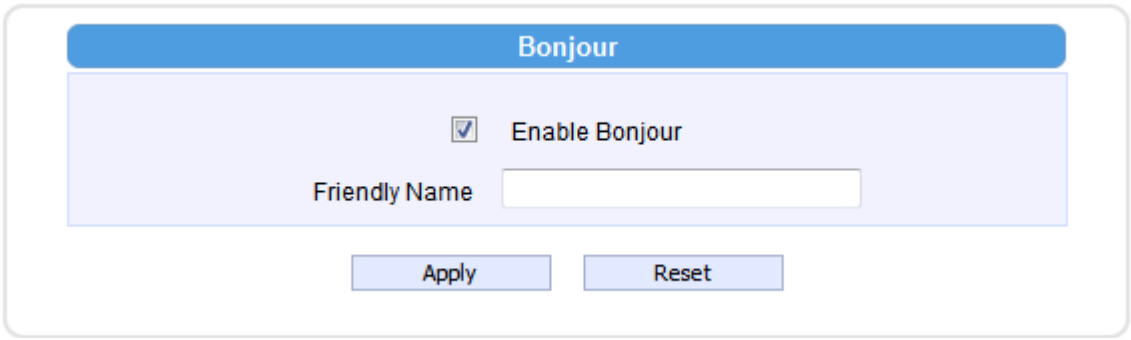
UPnP

Click the [UPnP™] item to display the UPnP page.



Click checkbox 1 to enable or disable the UPnP™ function. Edit the UPnP Friendly Name in text field. 2
Click the [Apply] button 3 to confirm the settings or click the [Reset] button 4 to re-enter the parameters.

Bonjour

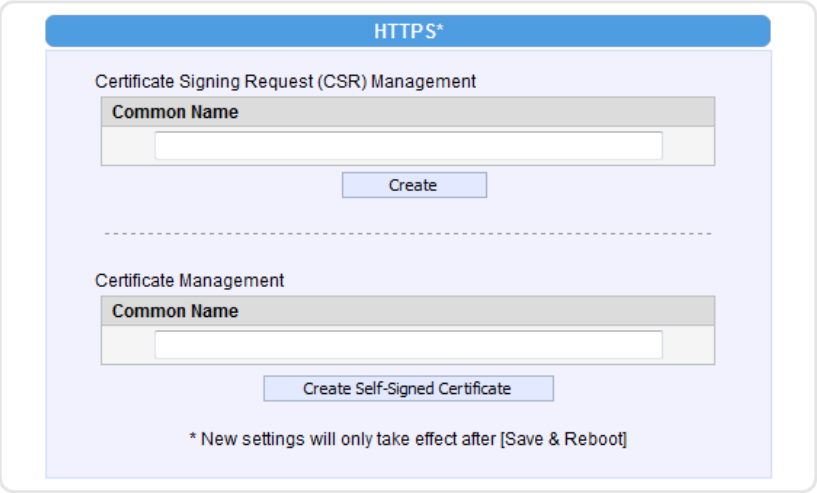


Bonjour is a protocol developed by Apple, Inc. This protocol allows for easy searching of devices on the network. Click the checkbox to enable Bonjour and enter a Friendly Name. You can do a camera search for this device via its Friendly Name.

HTTPS

HTTPS creates a secure channel over an insecure network. There are two methods to create HTTPS, Certificate Signing Request (CSR) and Self-Signed Certificate.

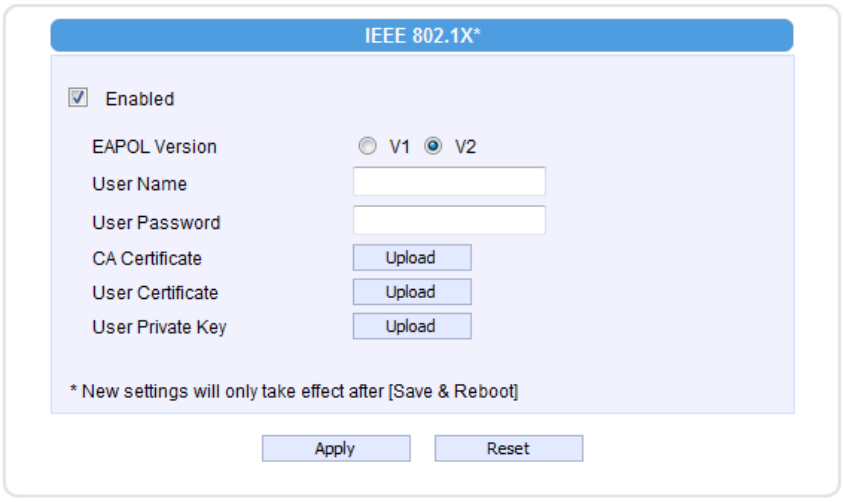
Certificate Signing Request (CSR): Uses a signed certificate issued by a trusted Certification Authority (CA).
Self-Signed Certificate: Uses a certificate created and issued by the user.



Click either the Create or Create Self-Signed Certificate button and configure settings in the pop-up screen to install the certificate. Note that the new setting will only take effect after Save & Reboot.

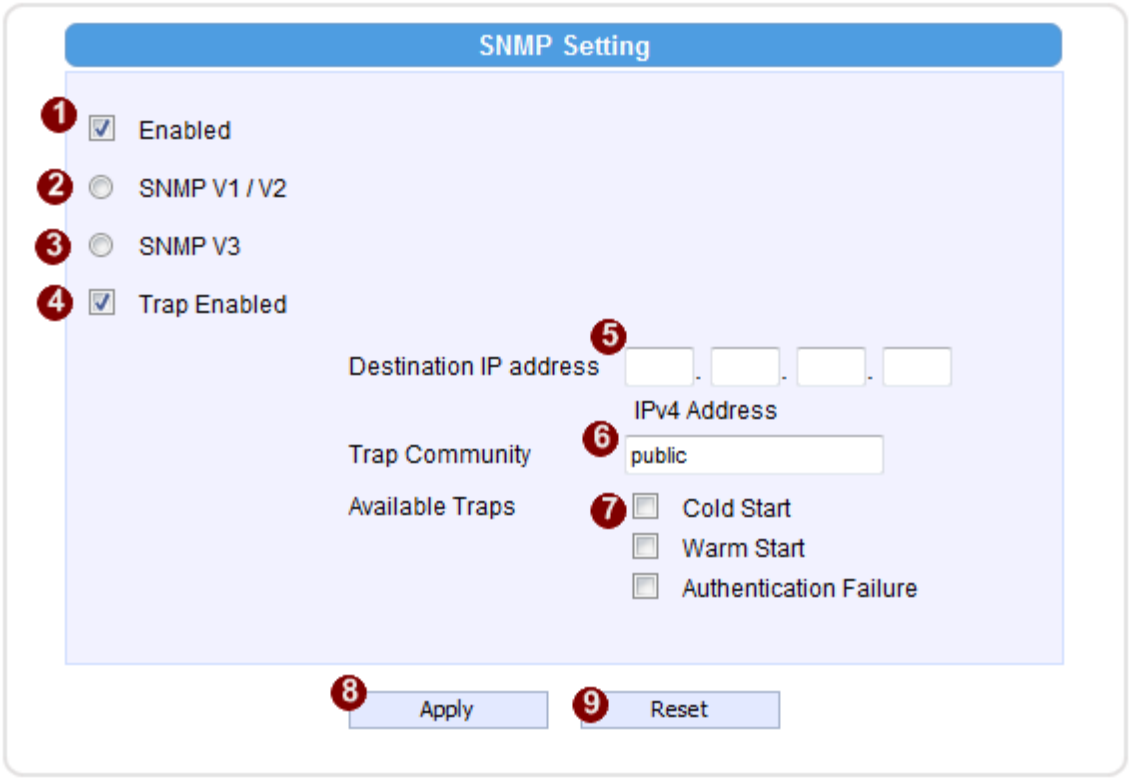
IEEE 802.1X

Check Enabled to enable IEEE 802.1x and configure settings in the screen below.
EAPOL (Extensible Authentication Protocol Over LANs) provides a secure authentication mechanism and negotiates a secure private key between the client and NAS, which can then be used for a wireless encryption session. Select version 1 or 2. Enter a User Name and Password and upload any required certificates. Note that the new setting will only take effect after "Save & Reboot".



SNMP Setting

Click the SNMP item to display the SNMP page.



Click ❶ to enable SNMP function.

Select ❷ to use SNMP V1/V2 (a portion of the screen will display to enable V1 and/or V2 and to enter the Read and Write Community) or ❸ to use SNMP V3 (a portion of the screen will display to enter a Security Name and Password).

Check the check box ❹ to enable traps.

Enter the Destination IP address in ❺.

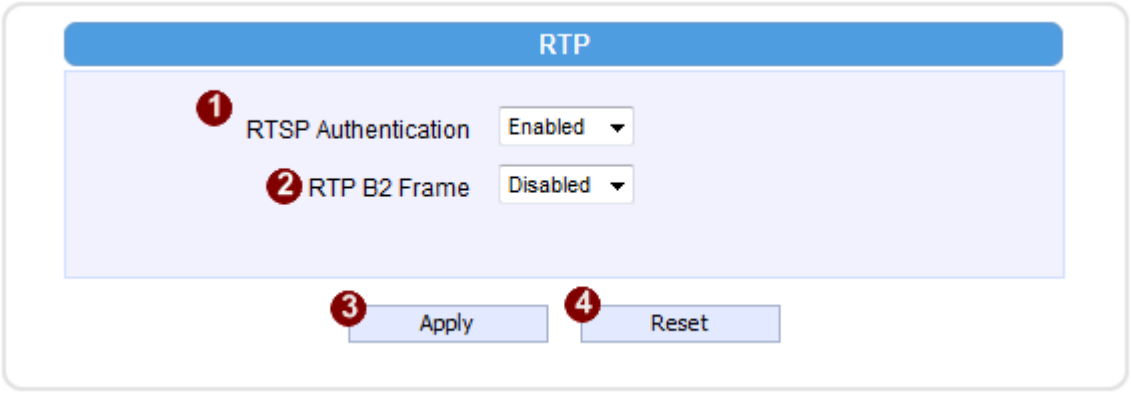
Enter the Trap Community used in ❻.

Select the Available trap in ❼ (Cold Start/Warm Start/Authentication Failure).

Click the [Apply] button ❽ to confirm the settings or click the [Reset] button ❾ to re-enter the parameters.

RTP

Click RTP item to configure RTP settings.

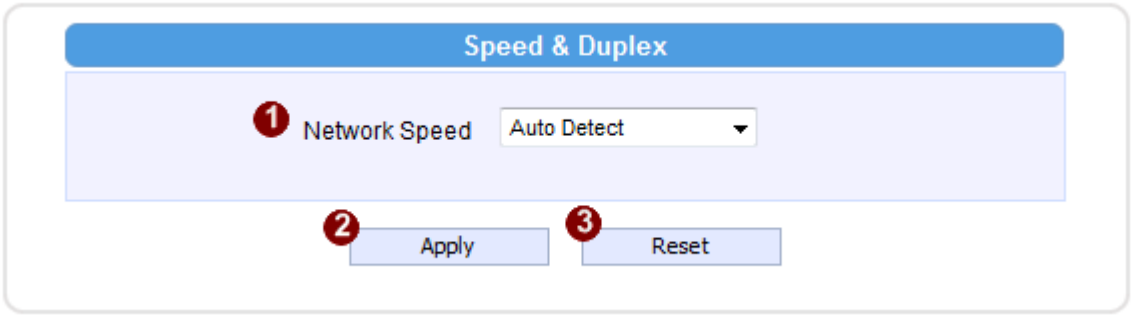


1	RTSP Authentication	Select Enabled from the dropdown list to enable RTSP streaming Account/Password authentication
2	RTP B2 Frame	Select Enabled from the dropdown list to enable the B2 frame in RTP streaming

Click the [Apply] button 3 to confirm the settings or click the [Reset] button 4 to re-enter the parameters.

Speed & Duplex

Click the [Speed & Duplex] item in the network section to display the Speed & Duplex page. Refer to the table below for how to configure each setting.



Parameters	Description
1 Network Speed	Select the network transmission speed from: 1. **Auto Detect** (default setting) 2. **100Mbps/Full duplex** 3. **100Mbps/Half duplex** 4. **10Mbps/Full duplex** 5. **10Mbps/Half duplex**

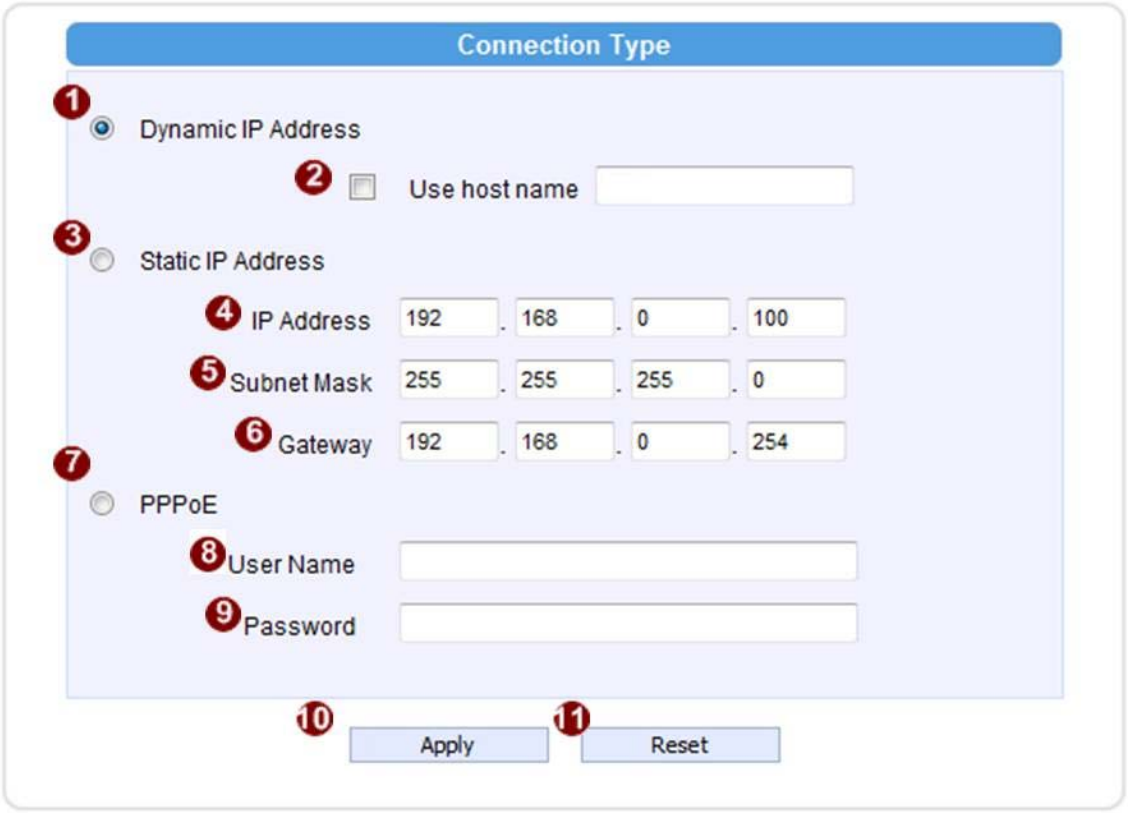
Click the 2 [Apply] button to confirm the settings or click the 3 [Reset] button to re-enter the parameters.

IP Settings

Click the [+] [IP Settings] item on the Setup menu to reveal the submenus.

Connection Type

Click the [Connection Type] item to display the Connection Type page. Refer to the table below for how to configure each setting.



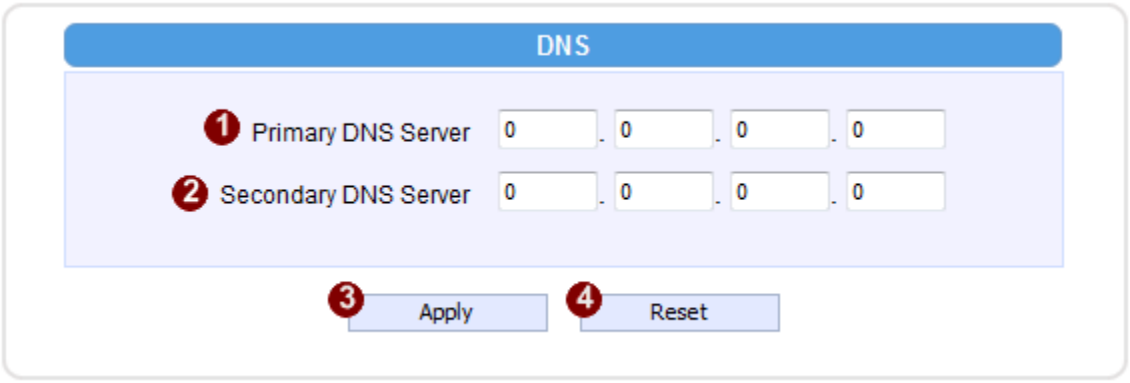
Parameters		Description
1	Dynamic IP Address	Click this to enable IP device's DHCP function. It will acquire its WAN port IP address from a DHCP server within the same network. (You must have a DHCP server in order to enable this function.)
2	Use host name	Check this box and enter the host name to display in utility tools (or in ViconNet Site List), ex., IP Utility.

❸	Static IP Address	Click this to manually enter the IP address. ❹ **IP Address**: Enter the WAN port IP address. ❺ **Subnet Mask**: Enter the subnet mask of WAN port. If IP address is changed, adjust the subnet mask accordingly. ❻ (**ISP) Gateway**: Enter the IP address of the gateway (the router).
❼	PPPoE	Click this when you connect IP device directly to the xDSL modem. ❽ **User Name**: Enter the user name of your xDSL account. ❾ **Password**: Enter the password of your xDSL account. **Note**: You have to click the [Save & Reboot] after you click the [Apply button] to let this IP device start xDSL connections.

Click the ❿ [Apply] button to confirm the settings or click the ⓫ [Reset] button to re-enter the parameters.

DNS

Click the [DNS] item to display the DNS Server page. Refer to the table below for how to configure each setting.

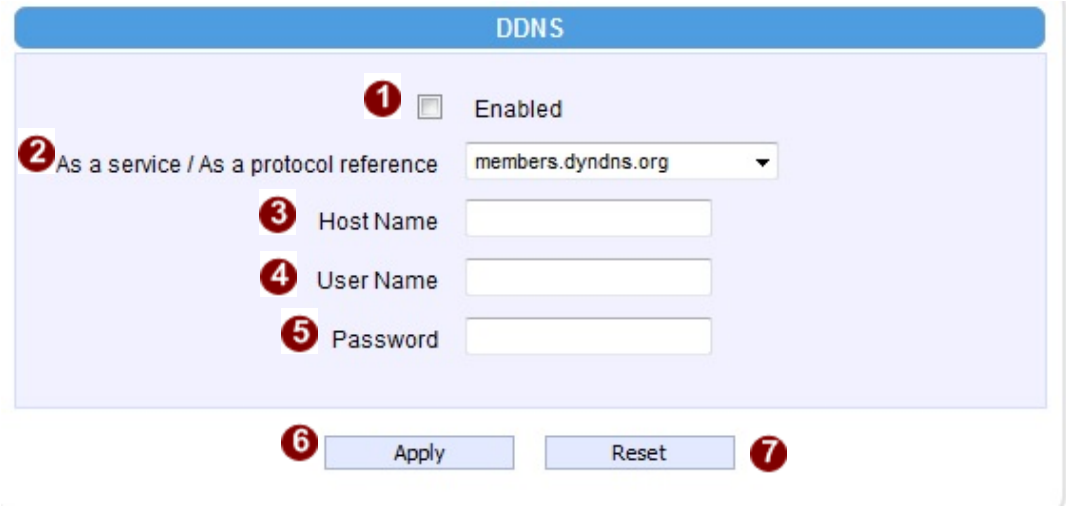


Parameters		Description
❶	Primary DNS Server	Defines the IP address of the primary DNS server. This is used for identifying this computer by name instead of IP address.
❷	Secondary DNS Server	The IP address of the secondary DNS server. It will be used if the primary DNS server fails.

Click the ❸ [Apply] button to confirm the settings or click the ❹ [Reset] button to re-enter the parameters.

DDNS

Click the [DDNS] item to display the DDNS page. Refer to the table below for how to configure each setting.



Parameters	Description
1 Enabled	Click this to enable IP device's DDNS function. DDNS function enables user to connect to this IP device by domain name even if its IP address is not static.
2 Service/ Protocol reference	Select one of the DDNS service providers from the dropdown list. Visit their website to get a DDNS service account for this IP device.
3 Host Name	Enter the host name of your DDNS service account. (ex: xxxx.dyndns.org)
4 User Name	Enter the user name to login your DDNS service account
5 Password	Enter the password to login your DDNS service account

Click the 6 [Apply] button to confirm the settings or click the 7 [Reset] button to re-enter the parameters.

Video & Audio

Click the [Video & Audio] item on the Setup menu to view the submenus.

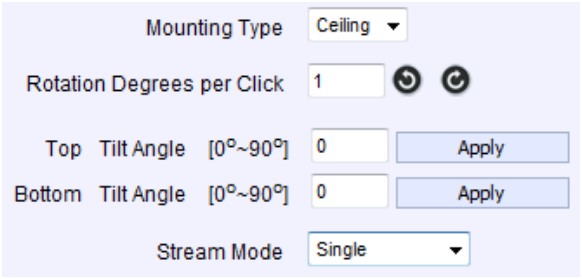
Camera Options

This section determines how many streams are available from this device. There are six modes: Single, Dual, ePTZ, MD Preset, 6 Streams and Fisheye View. .At this time, ViconNet only supports a single stream as it is set in the camera. Different VMS support different features of the camera.

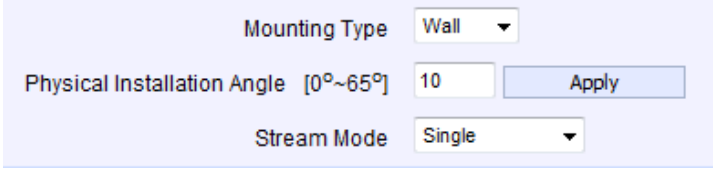
Single Mode

In single stream mode, there are two options depending on the device's mounting type - Ceiling or Wall. In Single Mode, resolutions available include Full HD 1920 x 1080 and HD 720 1280 x 720.

Selecting Ceiling Mounting Type, you see the double panorama view in preview windows. The view can be rotated by clicking on the rotation symbols; the amount of rotation of each click can be defined by changing the Rotation Degrees per Click field. You can adjust the viewing angle by typing the tilt angle degrees into the fields; the two views can be tilted independently.



Selecting Wall Mounting Type**,** the panorama view is displayed in preview windows. Adjusting the Physical Installation Angle will do proper dewarping based on the newly defined center of the view.



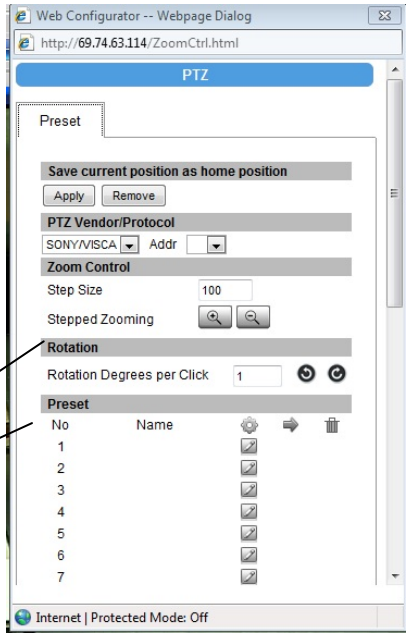
Type	Description	Physical Installation Angle
	Not using the 10° Hemispheric Camera Wall Mount	0 degree
	With 10° Hemispheric Camera Wall Mount	10 degree

ePTZ Mode

ePTZ mode of the hemispheric camera works in similar way as optical PTZ function in conventional PTZ camera domes. As the camera receives commands from remote client, it changes the direction of the view or zooms in or out digitally. The stream coming out from the camera represents current viewing direction of the camera, not the panoramic view. This mode is not supported in ViconNet.

The resolutions available in ePTZ include 4M 2032 x 1920, Full HD 1920 x 1080, HD720 1280 x 720 and 640 x 480.

Using the hemispheric camera in ePTZ mode, this screen is available by clicking on PTZ button in the Live View screen. Mouse PTZ is enabled at the same time.



Change the current zoom ratio by clicking on the Stepped Zooming button. Step size will determine how much each click on stepped zooming changes the zoom ratio. The view can be rotated by clicking on the rotation symbols; the amount of rotation of each click can be defined by changing the Rotation Degrees per Click field.

You can configure up to 32 presets. Click Edit icon to enter a name; click the Set icon and then move the camera to desired position and then click Set icon again. Now the camera can go directly to that position by clicking

on the Goto icon button (Edit button must not be highlighted). The preset position can be changed by selecting the Edit icon. Click Delete icon to remove this preset point from camera memory.

In this mode, the cursor becomes a red plus sign that can be used to pan, tilt and zoom into the image.

Use ePTZ in Live View by moving the mouse over the video and clicking anywhere on the video. Wherever you click, that point will become the new "center" of the view; this is how to "pan" and "tilt" the camera view. The view can also be rotated via PTZ panel.
To zoom in or out in ePTZ mode, use the scroll wheel of the mouse.

Preset Tour

After the presets are set, the Tour function will be enabled. Refer to Preset Tour, in the Live View, Zoom Control Panel section of this manual.

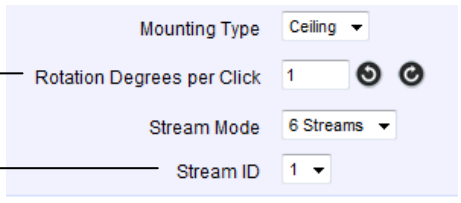
Note: Home position has to be set again after changing the installation type, the motion detection configurations and PTZ configurations like presets.

6 Streams Mode

6 Streams mode functions in a similar way as a multi-channel video encoder; it acts like 6 different VGA cameras, each pointing in a different direction. This mode is not supported in ViconNet.

One of the benefits of 6 Streams mode is to focus only on regions that are important and discard the rest of the scene. This can help save bandwidth and storage space.

Use the on-video controls (Mouse PTZ) to shift the VGA region to the desired location.



Rotate the view as needed.

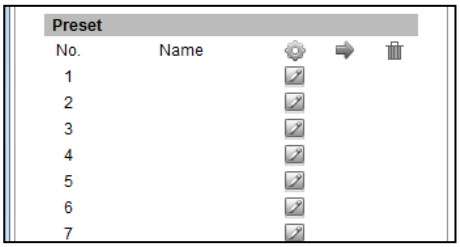
To setup another stream, select it from Stream ID list.

MD Preset Mode

To use MD Preset mode, presets must first be set from Live View page. This mode is not supported in ViconNet.

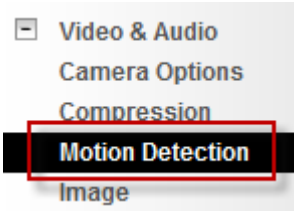
1. Live View → PTZ → Preset

Use the Live View on-video controls (Mouse PTZ) to shift the region to the desired location for each preset.



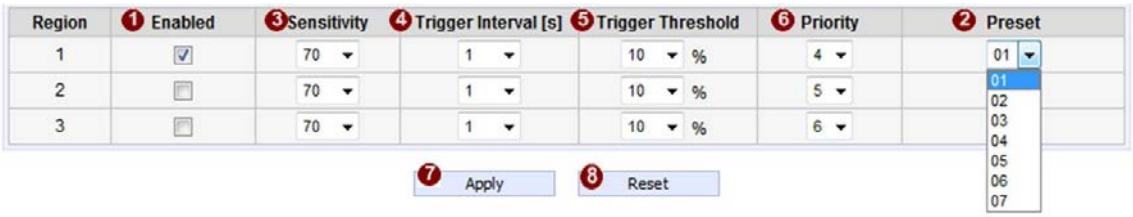
2. Setup → Video & Audio → Motion Detection

Set up the detail settings of motion detection from the Motion Detection page.



3. Motion Detection Setup

Press Setup to edit the settings. There are six set regions on Ceiling mounting type and three regions on Wall mounting type.



STEP 1: Click the 1 checkbox to enable motion detection for each region**.**

STEP 2: Choose the 2 preset you want to use; the camera will go to this position upon motion.

STEP 3: Set the 3 sensitivity of motion detection region, the level of motion required in each area to cause an event.

STEP 4: Set the 4 interval time of motion detection. After a motion event is triggered, no more events will be triggered within this time in the same region.

STEP 5: Set the 5 trigger threshold of motion detection region, the amount of change (%) in the area to cause an event. The larger this value, the larger the object size needs to be to trigger

motion detection.

STEP 6: Set the 6 priority of this preset to trigger the motion detection. The higher number is the higher priority.

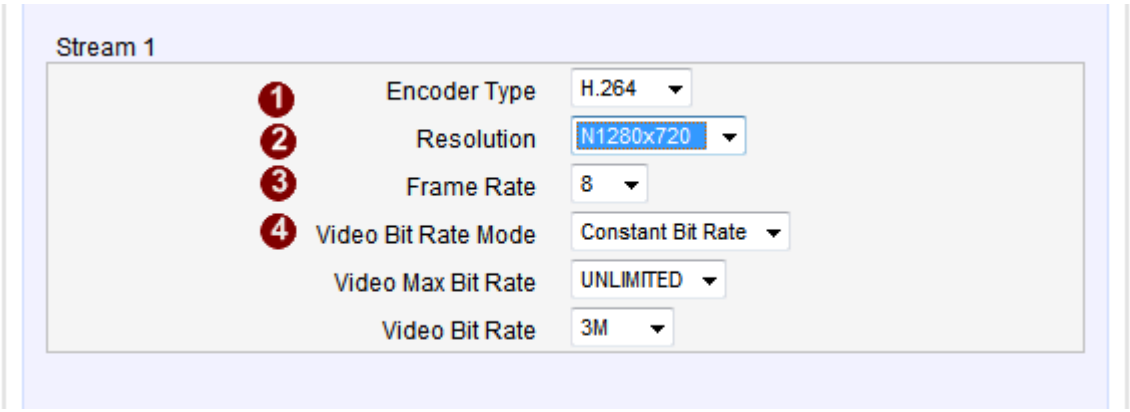
Click the 7 [Apply] button to confirm the settings or click the 8 [Reset] button to re-enter the parameters.

Fisheye View

In Fisheye View mode, camera will provide an extremely wide angle of view for a panoramic view image, capturing a complete 360° view delivered as two 180° images. The available video resolution is 2032 x 1936. This mode is not supported in ViconNet.

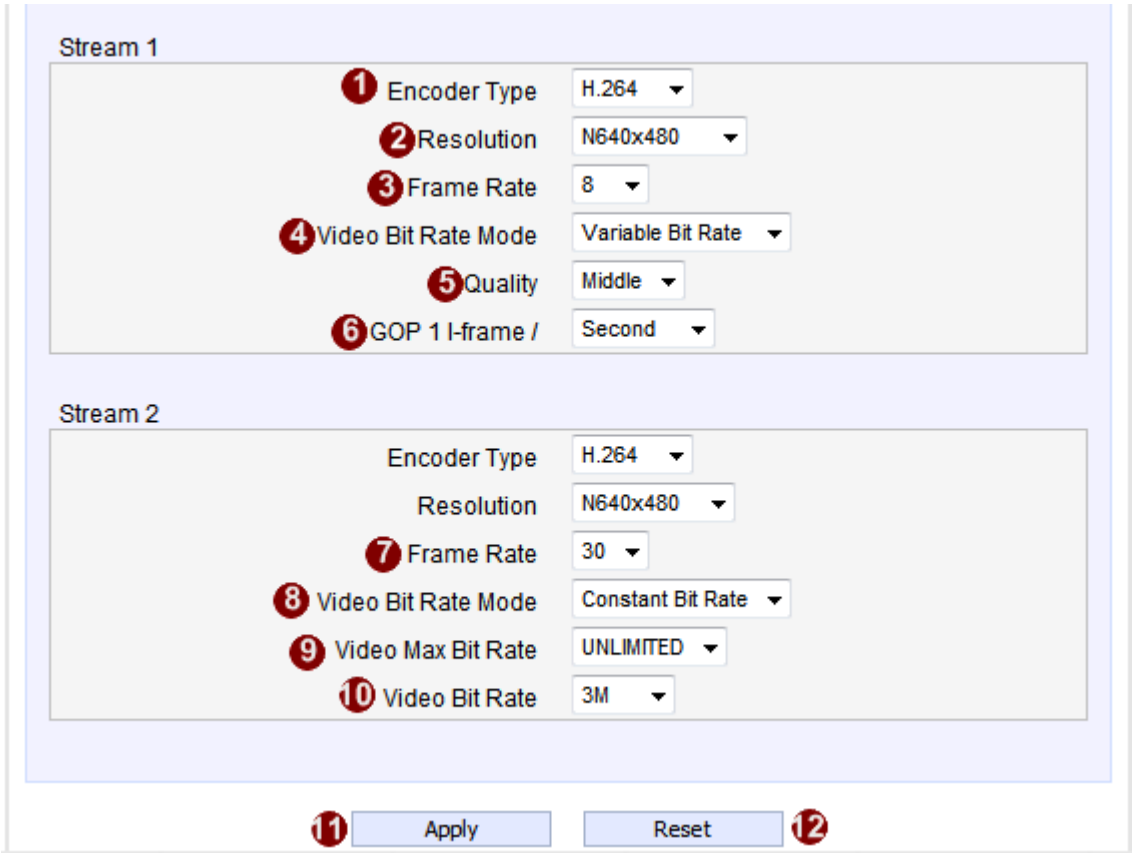
Compression

Single Stream Mode:



	Parameters	Description
1	Encoder Type	Select the compression type: MPEG-4/M-JPEG/H.264
2	Resolution	Select the video resolution of the camera from 4M (2032 x 1920), 2M 1080p (1920 x 1080), 1M 720p (1280 x 720) and VGA (640 x 480). Remember the choices depend on the stream mode.
3	Frame Rate	Select the available frame rate (fps) from the drop down menu.
4	Video Bit Rate Mode	**Constant Bit Rate**: The bit rate remains constant for all conditions. Video quality will be better when image is still. Large amount of motion or complex scene will degrade quality slightly. **Variable Bit Rate**: The video bit rate will vary based upon scene complexity and amount of movement. The quality will remain the same.
5	Quality (Variable Bit Rate Only)	When encoder type is MPEG-4 or H.264 and video bitrate mode is Variable Bit Rate, select the quality value from High/Medium/Low
6	GOP Length (Variable Bit Rate Only)	When encoder type is MPEG-4 or H.264 and video bitrate mode is Variable Bit Rate, select the Interval between two I-frames. This is also called GOP length. (Group of Picture). Default value is one I frame per second. The maximum length of GOP is limited to 60. Vicon recommends choosing the same as the fps.
9	Video Max Bitrate (Constant Bitrate only)	This puts a hard cap on the maximum bit rate allowed in any given second of video streaming. Assigning a limited bit rate may result in a few dropped frames when the stream data overflows the allowed bit rate. Doing so will also disable Bit Rate setting below; select Unlimited to avoid this.
10	Video Bitrate (Constant Bitrate only)	This is the target bitrate that the camera will attempt to provide when using Constant Bitrate mode. The actual value will fluctuate slightly based on scene changes.

Dual Steam Mode:



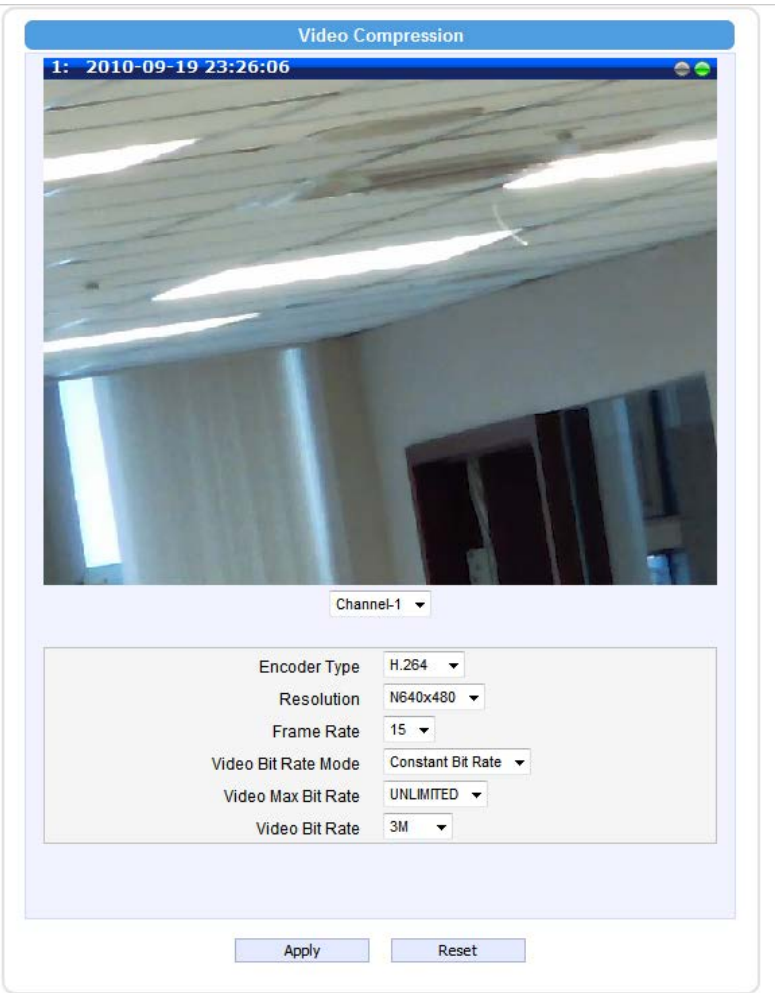
	Parameters	Description
1	Encoder Type	Select the compression type: MPEG-4 / M-JPEG / H.264
2	Resolution	Select the video resolution of the camera from 4M (2032 x 1920), 2M 1080p (1920 x 1080), 1M 720p (1280 x 720) and VGA (640 x 480). Remember the choices depend on the stream mode.
3	Frame Rate	Select the available frame rate from the drop down menu.
4	Video Bit Rate Mode	**Constant Bit Rate**: The bit rate remains constant in all conditions. Video quality will be better when image is still. Large amount of motion or complex scene will degrade quality slightly. **Variable Bit Rate**: The video bit rate will vary based upon scene complexity and amount of movement. The quality will remain the same.
5	Quality	When encoder type is MPEG-4 or H.264, and video bitrate mode is Variable Bit Rate, select the quality value from High/Medium/Low
6	GOP Length	When encoder type is MPEG-4 or H.264 and video bitrate mode is Variable Bit Rate, select the interval between two I-frames. This is also called GOP Length. (Group of Picture). Default value is one I frame per second. The maximum length of GOP is limited to 60. Vicon recommends choosing the same as the fps.
7	Frame rate	Select the available frame rate (fps) from the drop down menu**.**
8	Video Bit Rate Mode	**Constant Bit Rate**: The bit rate remains constant in all conditions. Video quality will be better when image is still. Large amount of motion or complex scene will degrade quality slightly. **Variable Bit Rate**: The video bit rate will vary based upon scene complexity and amount of movement. The quality will remain the same.

9	Video Max Bitrate	This puts a hard cap on the maximum bit rate allowed in any given second of video streaming. Assigning a limited bit rate may result in a few dropped frames when the stream data overflows the allowed bit rate. Doing so will also disable Bit Rate setting below; select Unlimited to avoid this.
10	Video Bitrate	This is the target bitrate that the camera will attempt to provide when using Constant Bitrate mode. The actual value will fluctuate slightly based on scene changes.

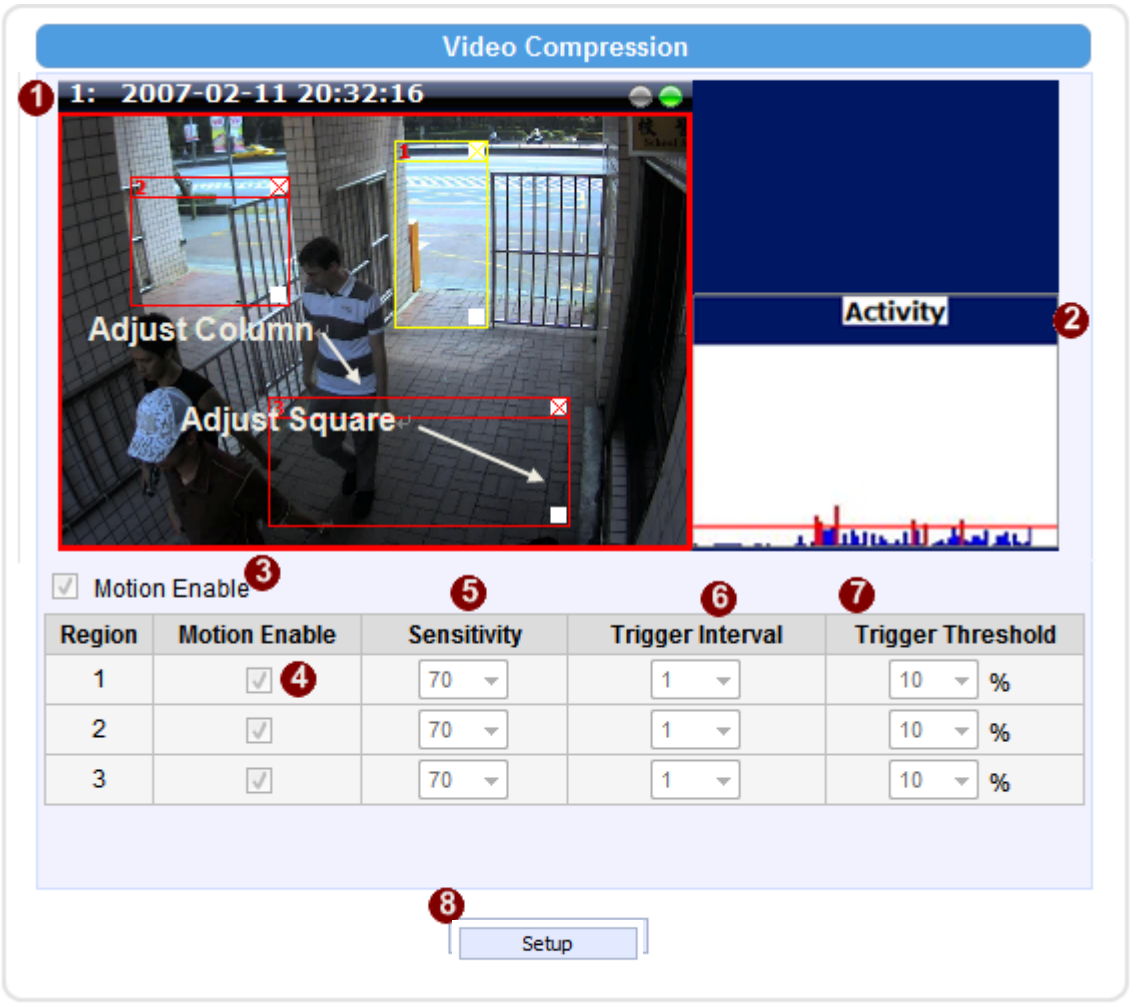
Click the 11 [Apply] button to confirm the settings or click the 12 [Reset] button to re-enter the parameters.

6 Streams Mode:

Configuring compression settings in 6 Streams mode is basically the same as configuring compression settings in other modes. The setting is the same across all 6 channels, but you may switch view of the individual streams by selecting the stream on top.

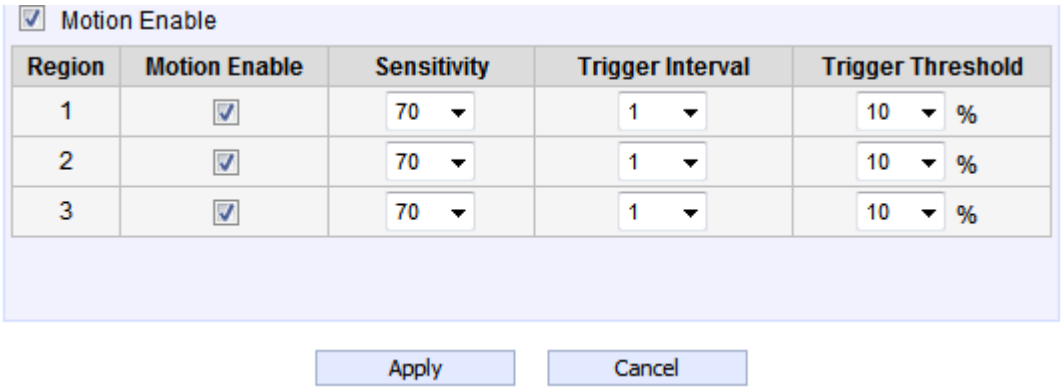


Motion Detection



Click [Motion Detection] from the Setup page. Click the 8 [Setup] button to edit the settings. Before clicking Setup, you will be in passive observer mode. You will see activity status and whether each motion window has motion activity, but you will not be able to change settings.

Motion Setup mode



Video Motion Detection:

STEP 1: Check the Enabled checkbox to enable motion detection 3.

STEP 2: Click the 4 checkbox to enable motion detection for each individual region**.**

STEP 3: Click one region to start to edit its size and location. A red number corresponding to the number region selected will appear in the top bar of the motion area. You can click in this "Adjust Column" top area to drag motion region to the desired location. You can click the white "Adjust Square" in the bottom right of the motion area and drag to adjust motion region size. You can click the upper right button to cancel this motion region. Repeat above procedure to adjust the motion region. Only one motion detection region can be selected at a time for editing.

STEP 4: Set the 5 sensitivity of motion detection region, the level of motion required in each area to cause an event.

STEP 5: Set the 6 interval time of motion detection. After a motion event is triggered, no more events will be triggered within this time in the same region

STEP 6: Set the 7 trigger threshold of motion detection region, the amount of change (%) in the area to cause an event. The larger this value, the larger the object size needed to trigger motion detection.

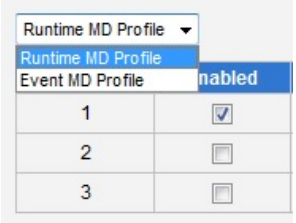
STEP 7: In motion activity 2 window, the bar shows the motion activity status. You can also see the trigger threshold (red line). When the motion activity exceeds the trigger threshold, the bar becomes red to indicate that a motion event has been triggered.

While viewing the motion activity window, you can adjust the motion sensitivity (the higher the number, the easier camera considers video change to be an activity) and the threshold (the higher, the larger the activity needed to trigger a motion event). If the default settings are not satisfactory for your scene, try the alternative recommendations of:

Sensitivity: 80, Threshold: 2~5 (for normal environment)

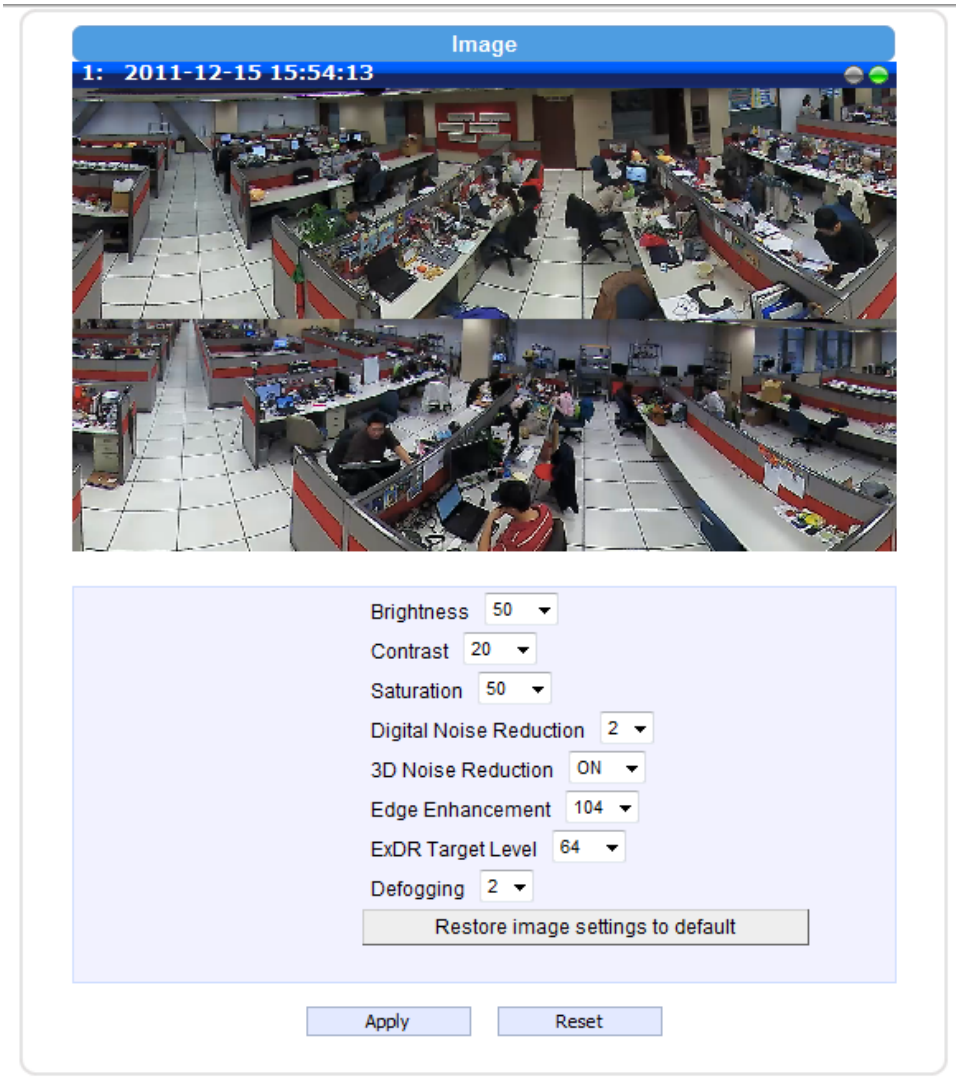
Sensitivity: 80, Threshold: 5~10 (for very noisy environment)

There is a choice of MD Profile types, Runtime MD Profile and Event MD Profile. This is used to setup two independent groups of Motion Detection regions (up to 3 regions in each group). Normally, the Runtime MD Profile is used as the active profile of the camera. However, if it is required to have two different motion detection profiles, for example one for day and one for night, the camera can switch to Event MD Profile using the Event Handler. The parameters for each profile are setup here and the response is setup in the Event Handler.



Image

This section concerns the general video settings.



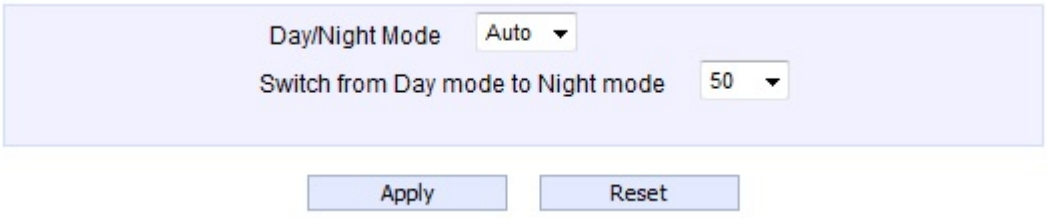
1. **Brightness:** Select the Brightness value (0-100). The higher the value, the brighter the image.
2. **Contrast:** Select the Contrast value (0-100). The higher the value, the sharper the contrast.
3. **Saturation:** Select the saturation value (0-100). The higher the value, the more saturated the image.
4. **Digital Noise Reduction:** Select the DNR value (0-4). The higher the value, the smoother and clearer the image.
5. **3D Noise Reduction:** Select ON or OFF to enable or disable this function. Enable this for smooth and clear image. Disable this if your scene contains many extreme details that may be smoothed over with 3D NR.

6. **Edge Enhancement:** Select the Edge Enhancement value (1-255). The higher the value, the sharper the image.
7. **ExDR Target Level:** Select the ExDR value (0-255). The higher the value, the greater the enhancement of the image in the brightest and darkest area. This provides for a more evenly illuminated image and brings out greater detail to the eye.
8. **Defogging:** Select the Defogging value (0-4). The higher the value, the clearer of image in foggy situations. To disable this function, choose value 0.
9. **Advanced WDR:** Select this Low, Medium, High, Highest. Wide Dynamic Range provides clear images even under extreme and varied lighting conditions.
10. **Restore image settings to default:** Press this button to use the default image settings.

    Click the [Apply] button to confirm the settings or click the [Reset] button to re-enter the parameters.

Day/Night

This section concerns the day and night switch timing for your camera.

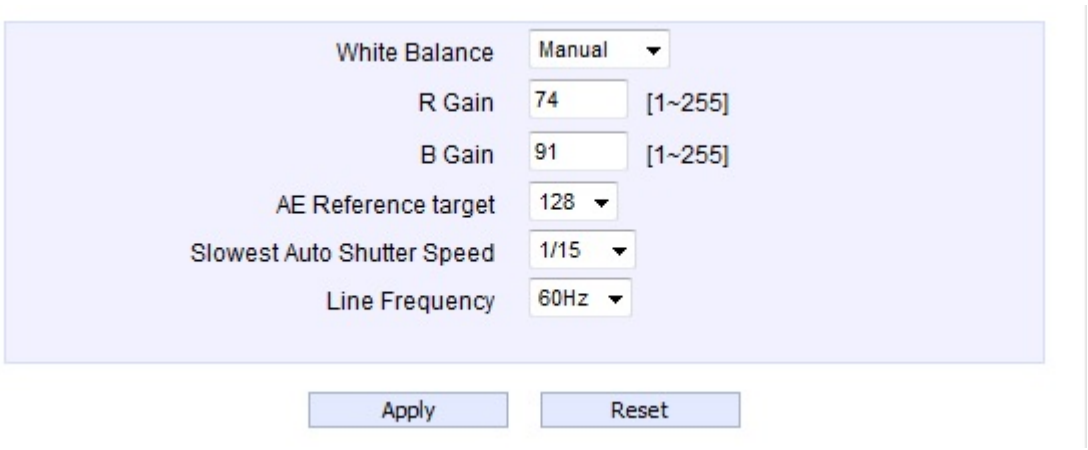


1. **Day/Night Mode:** The camera will change between day and night modes by default (Auto). The camera can be set to stay in day or night mode. Select Auto, Day or Night.
2. **Switch from Day mode to Night mode:** This value (0-100) controls the level of light that the camera switches into night mode. Increasing it will make camera switch to night mode at a darker illumination level.

   Click the [Apply] button to confirm the settings or click the [Reset] button to re-enter the parameters.

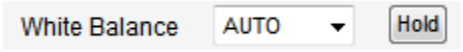
White Balance

Configure White Balance for best image quality here. Some options will only appear under certain White balance modes. These are described in detail below.

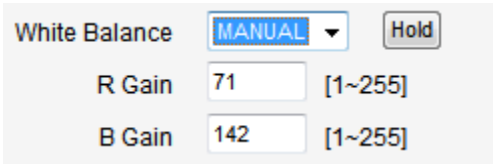


White Balance weighs the proportion of color in the scene and recreates the most realistic color. Usually this function is performed seamlessly in the background in Auto mode. In some cases it may be desirable to fix the color proportions of your view. Hold a piece of white paper in front of camera for reference; wait until you like the current value then click on the Hold button to the right. This will lock the current value and enter the Manual white balance mode. As an alternative, select Manual from the White Balance drop down list and adjust the Red and Blue Gain.

Before Hold



Entering Manual mode with Hold White Balance

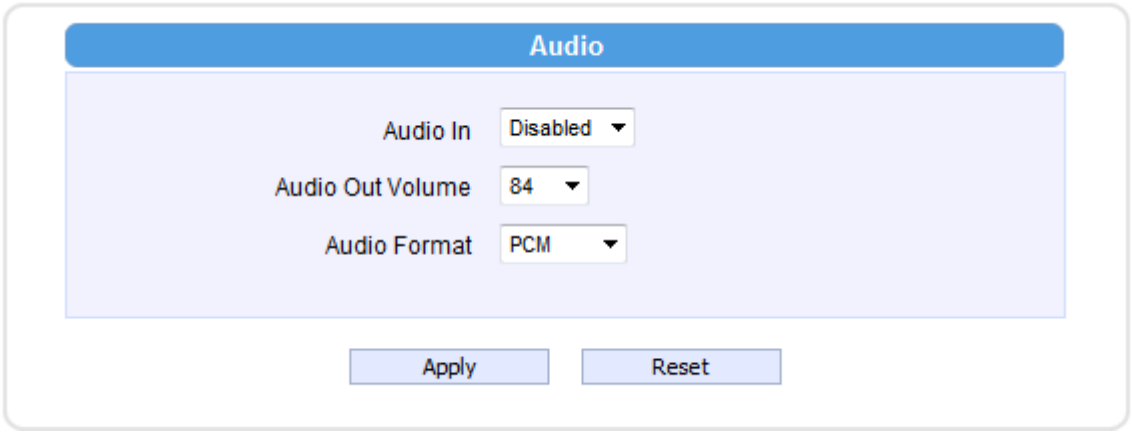


AE Reference Target (Auto Exposure reference target) is considered the Target Brightness on Sensor (1-255. The camera will use several internal parameters to achieve best quality with reference to this. *The higher this value, the brighter the overall scene and the more noise at night.*

Slowest Auto Shutter Speed is the longest allowed exposure time for each frame (1/15-1/250). In extreme low light conditions, the exposure time is automatically increased to get more light into one image. If it extends beyond the interval between frames (i.e., 1/30 second), then the frame rate will be automatically reduced. *Longer time in this value gives clearer images at night for slow moving objects, but more motion blur for fast moving objects.*

Line Frequency is the power supply frequency. Select the right frequency (60 Hz or 50 Hz) to avoid image flickering.

Audio



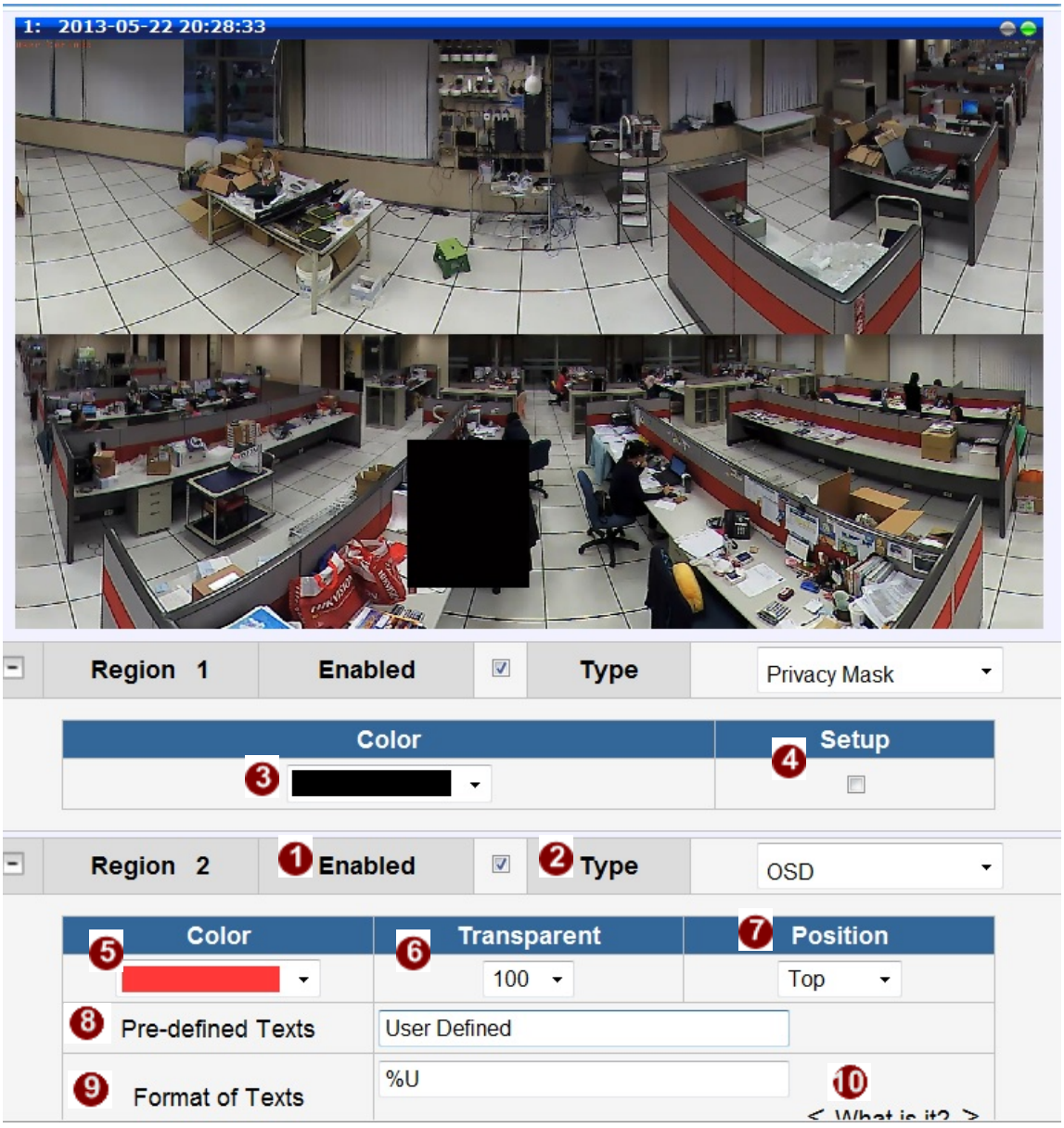
Audio In - Enable or disable Audio In via from the dropdown list.
Audio Out Volume – Control the output volume of Audio Out; the higher the number, the louder.
Audio Format – Select the audio's compression type, PCM (Pulse Code Modulation)/G.711A (Europe and the rest of the world)/G.711U (North America and Japan).

Click the [Apply] button to confirm the settings or click the [Reset] button to re-enter the parameters.

OSD/Privacy Mask

OSD (On Screen Display) and Privacy Masks are configured in this section. There are four regions available. Each may be used either as a Privacy mask or as OSD text.

Privacy Mask is not available in Dual Stream mode; disable Stream 2 if you want to use Privacy Mask/OSD.



Click the ⊞ [plus sign] to the left of the Region number to open the menu.

	Parameters	Description
1	Enable	Check this box to enable each OSD/Privacy Mask region
2	Type	Each region can be one of two types. OSD (On Screen Display) or Privacy Mask
3	Color* (Privacy Mask only)	This determines the color of the Privacy Mask area. Choose black, green, red or blue.
4	Setup (Privacy Mask only)	Click this checkbox to enable Privacy Mask area setup. Click and drag the adjust square at the lower right to change dimensions; click and drag the adjust column at the top to move position (similar to Motion Detection Region).
5	Color* (OSD only)	This determines the color of the OSD text. Choose black, green, red or blue.
6	Transparent	This number determines the level of transparency for the OSD text. 1 means that the background between the texts will not be visible, while 100 means the background will show through the OSD text.
7	Position (OSD only)	Select the location where the text will appear in the image, top or bottom.
8	Pre-defined Texts	Enter the user defined string (%U) as described in the next section. Total length cannot be more than 63 characters.
9	Format of Texts	This controls what is shown in the OSD text. You can click "What is it?" in the corner for a full list of available parameters. *The OSD text is primarily based upon this field.*
10	What is it?	Click "What is it?" to see the syntax list of how to configure the OSD text.

*Color choices:

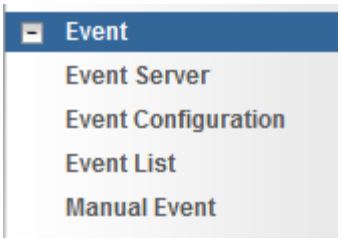
Click the 11 [Apply] button to confirm the settings or click the 12 [Reset] button to re-enter the parameters.

Event

This section describes how to setup the Event Handler, which deals with how the IP devices respond to situations. Each IP device can have a maximum of 10 Event Rules. Each rule includes one single trigger and one or many responses. Several types of responses are available. There are multiple external servers for the device to interact with.

When setting up Event Handler, there are four types of settings: Event Server, Event Configuration, Event Rules and Manual Event.

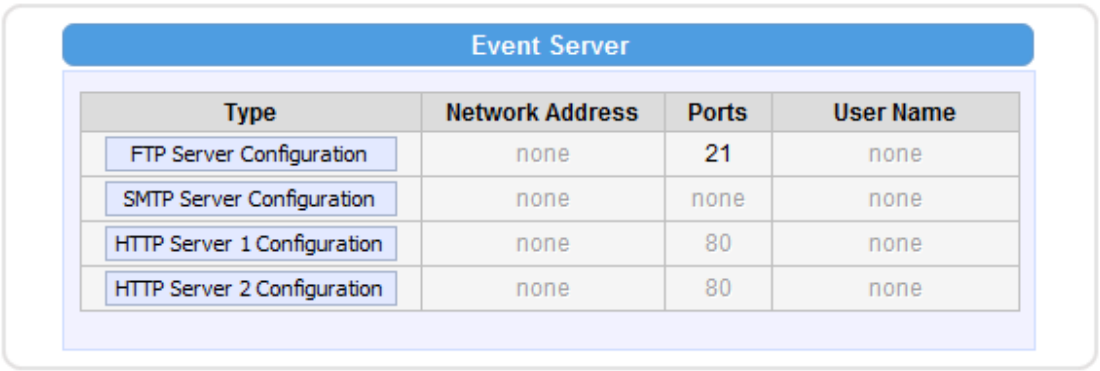
Click the [Event] item on the Setup page.



Event servers define what the device may interact with. This can be other servers or devices on the network, or even the camera itself. **Event Configuration** sets up a list of what to tell the other party during interaction. **Event List** lays down the rules and conditions about when to initiate which responses from which triggers. *The options available for Event rules are selected from the event servers and event configurations.*

Event Server

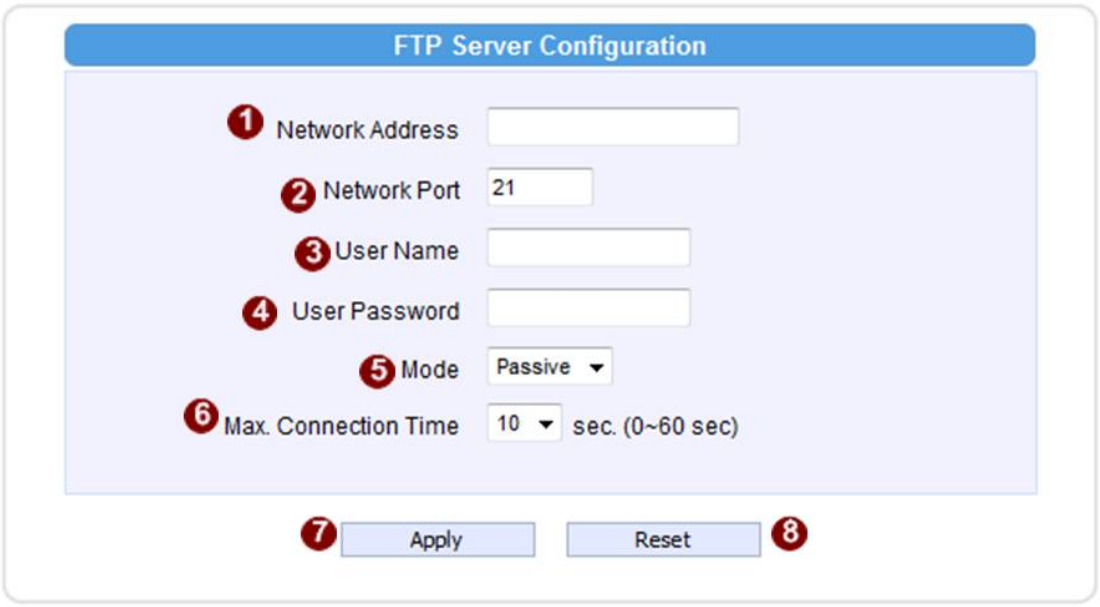
Event servers are classified as FTP servers, SMTP servers and HTTP servers



Click on the type of server to configure. A configuration page will display.

FTP Server

FTP servers can receive snapshot or video uploads that are issued as part of the response from event handlers. One FTP server can be setup.

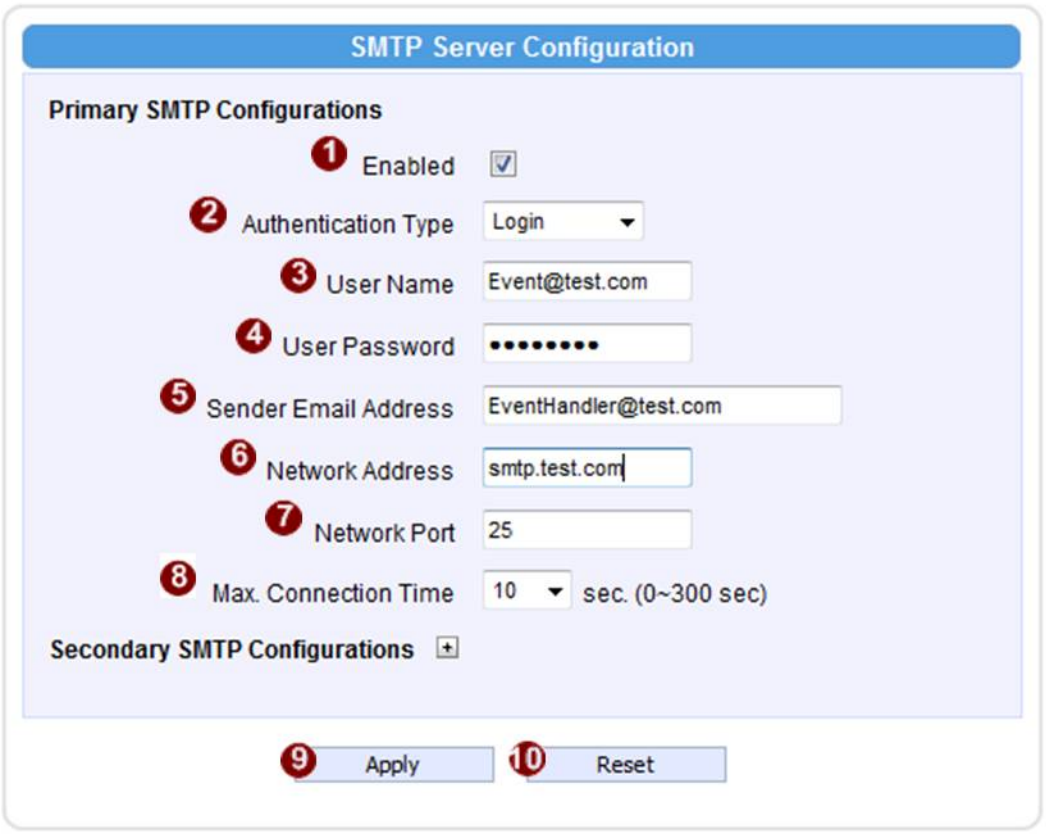


To setup FTP servers, make sure to enter 1 the Network Address, 2 the Network (FTP) Port, 3 the User Name, 4 User Password, 5 Connection Mode (Passive or Active) and 6 Maximum Connection Time before timeout (in seconds).

Click 7 [Apply] to use these settings or click 8 [Reset] to clear changes. Click the red X in the right corner to close this screen.

SMTP Server

SMTP servers can send email upon request from the IP device. The email can be a simple subject and text email, or attached with snapshot/video. Two SMTP servers can be setup. The device will first attempt to send the message via the Primary email SMTP server. If the first attempt to send the email fails (after the maximum connecting time), then the device will attempt to send the email via the secondary SMTP server. If the device sends email successfully via the primary SMTP server, then it will not use the secondary SMTP server.



To setup SMTP servers, make sure to click the checkbox to 1 Enable the SMTP account and 2 choose the proper Authentication Type. There are a number of types available. It is recommended to use Auto detection. Available authentication types include: Auto, None, Login, Plain, Cram MD5, Digest MD5 and POP Relay. Enter 3 the User Name, 4 User Password, 5 the Email Address displayed as sender (can be different than the user name), 6 Network (SMTP server) Address, 7 Network (SMTP server) Port number and 8 Max Connection Time before timeout (in seconds).

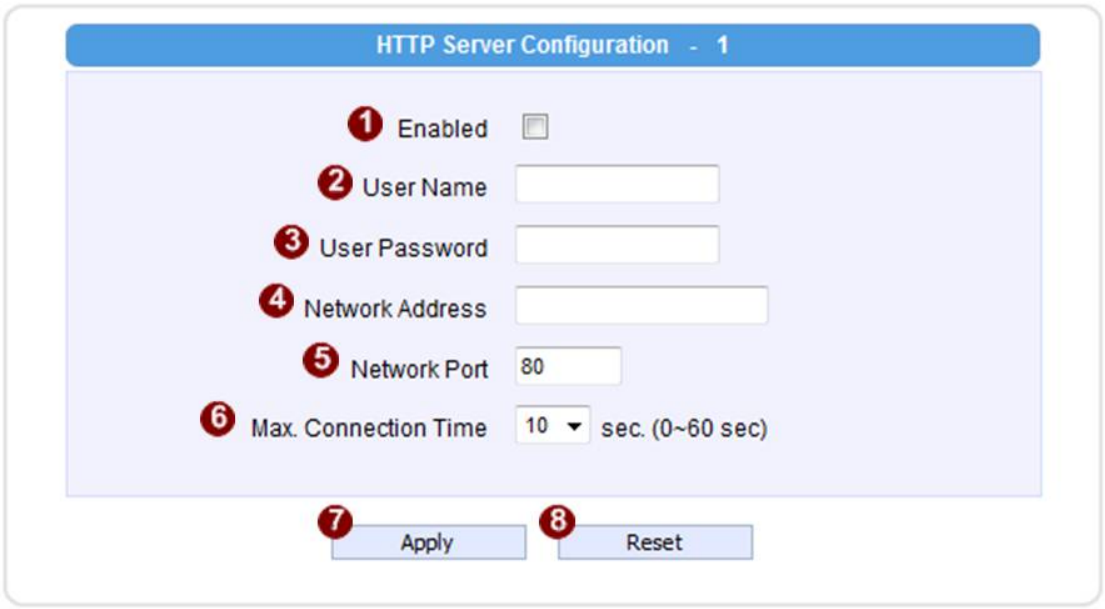
Click 9 [Apply] to use these settings or click 10 [Reset] to clear changes. Click the red X in the right corner to close this screen.

HTTP Server

Refer to Appendix A for detailed information and explanation on HTTP.

HTTP (CGI, Common Gateway Interface) servers are programs that run on web sites or many devices. They can be custom programmed to perform a large variety of actions based upon the input. You can define which HTTP/CGI server to connect to here and setup the user/password required to log into the target server. The actual message/command is setup in the Event

Configuration, Notification messages/URL commands section. Two separate HTTP/CGI servers can be defined.



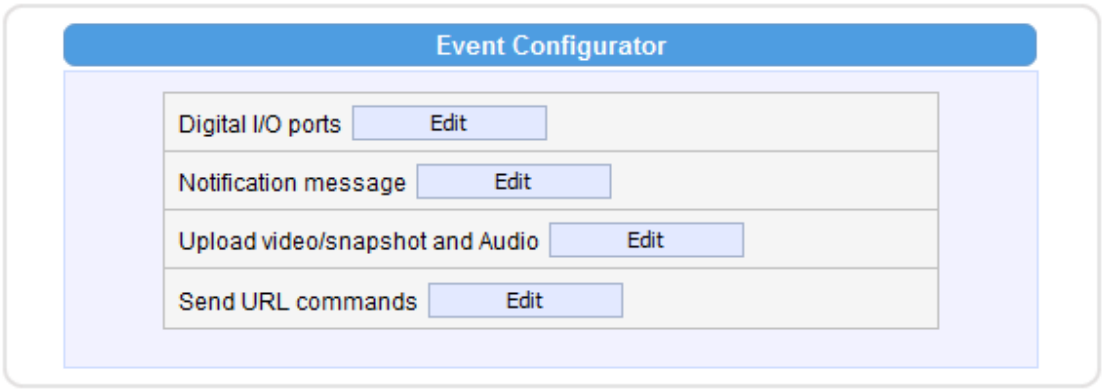
To setup HTTP servers, click the Enabled checkbox 1 to enable the HTTP server, then enter 2 User Name, 3 User Password, 4 Network (HTTP Server) Address, 5 Network (HTTP Server) Port number and 6 Max Connection Time before timeout (in seconds).

Click 7 [Apply] to use these settings or click 8 [Reset] to clear changes.

Event Configuration

Event configurations are the responses to when an event is triggered. For most types of responses, several different preset responses can be created and then mix and match in event rules. Some responses are not supported in all IP devices (e.g., DO, PTZ). Event Motion Detection profile is also a "triggerable" response, but the parameters are defined through the Video page, not in Event page.

The configurable responses are classified as Digital I/O ports, Notification message, Upload Image (Video)/Snapshot, and Send URL Commands.

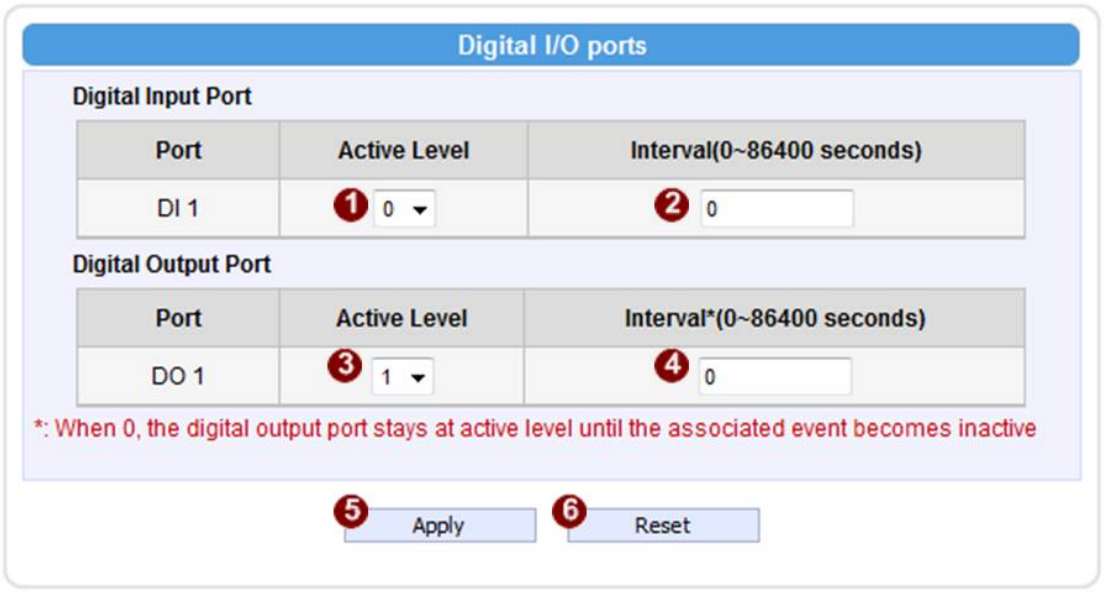


Click the Edit button to open the screen to configure the type of response. T

Digital I/O ports

Digital I/O ports read and control the voltage difference in the circuit and respond to it. These are useful in connecting to a wide variety of devices. D/I is a trigger, while D/O is a response. Both are setup here. Both have a low voltage state and a high voltage state, noted as 0 and 1.

Refer to Appendix A for detailed information and explanation of Digital I/O ports.



DI: To setup DI, define the 1 Active Level as 0 or 1. If the active level is set as 1, then camera will consider high voltage difference a trigger, which can be used to initiate other events. The event will end when the DI voltage goes back to 0. 2 Interval determines the minimum delay

that must pass before the IP device will accept another trigger from DI (in seconds). 0 means there is no minimum delay limit.

DO: To setup DO, define the ❸ Active level as 0 or 1. If the active level is set as 1, then camera will change the output voltage to high when this response is activated by an event rule. The voltage will go back to low when the event ends. ❹ Interval determines the minimum duration of each DO response (in seconds). DO will remain at the active level during this time, and if another event triggers DO before the end of the first DO, the second trigger will not take effect. 0 means there is no minimum duration.

Click [Apply] to use these settings or click [Reset] to clear changes. Click the red X to close this screen.

Notification message

*Pre-requisites: **SMTP server / HTTP CGI server setup.**

Notification messages may be sent to either an email or a HTTP CGI server. If sent to a CGI server, it works the same as a URL command, but it does not allow a second message at the end of the event. Up to three preset messages can be configured. Additionally, a message can be configured but disabled. This will allow the settings to be kept without being used, which will be useful in testing and troubleshooting.

Check the notification box. The following screen displays.

To setup Notification Messages, make sure to 1 Enable the message and then 2 determine what type of message to send (HTTP CGI or email). The screen changes depending on this choice.

If you are sending to CGI server, enter the CGI path 3, the URL command itself 4 and an optional message 5.

If you are sending email 7, enter the recipients E-Mail address 8, the email subject 9 and the body message 10.

Click 11 [Apply] to use these settings or click 12 [Reset] to clear changes.

Upload Video/Snapshot and Audio

*Pre-requisites: **SMTP server / FTP server / HTTP CGI server setup.**

IP devices can send video recording/snapshots to the chosen server upon event. Video will be in .RAW format, while snapshots will be .JPG files. You can define up to three groups of settings to upload video/snapshot. Snapshots can be sent to FTP/HTTP CGI and via Email, while video can only be uploaded to FTP or HTTP CGI servers. If Audio is enabled in device, the uploaded video will include audio.

The parameters needed to setup this function are different for each task combination (snapshot/ ftp or video/HTTP, etc.) and are explained below:

Enable						User Interface
						Enable Message 1 ☑
Upload Media Type	Snapshot			Video		Upload Media Type ◉ Snapshot ○ Video Test
Upload Media to	Email	FTP	CGI	FTP	CGI	Upload Media To E-MAIL
Upload Period	Y	Y	Y	Y	Y	Upload Period 0 (0~86400 seconds)
Images during Upload Period	Y	Y	Y			Images during Upload Period 0 (Use 0 for maximum number of images)
Pre-Buffer Time				Y	Y	Pre-Buffer Time 0 (0~3 seconds)
Image File Name	Y	Y	Y	Y	Y	Image File Name Front_Door_%YYYY_%MM_%DD naming rule
Upload Path	*	Y	Y	Y	Y	Upload Path /Event_Snapshot naming rule
CGI Path & Program			Y		Y	CGI Path & Program
E-Mail Recipients	Y					E-Mail Recipients using ';' for multiple addresses
Subject	Y					Subject Front Door Snapshot
Video Source	Y	Y	Y	Y	Y	Video Source 1

Upload video/snapshot and Audio checkbox: Check to enable this rule or uncheck to disable. Sometimes it is useful to keep the settings but not enable it for troubleshooting purposes.

Upload Media Type: Select snapshot or video media type by clicking radio button.

Upload Media to: This defines the task at hand, the location to which the media will be uploaded; the selection changes the fields that need to be filled out.

Upload Period: IP device will provide video/snapshots for the number of seconds entered. It will stop uploading video/snapshot at the end of this period. If you have video management software recording from this camera at the same time, the normal recording through NVR will not be affected and goes on throughout the event period and afterwards, but the special upload session will end as the event ends.

Images during Upload Period: This is used only by snapshots. It tells the camera how many snapshots it should attempt to capture during the Upload Time. If this value is set to 0, then the IP device will attempt to capture as many snapshots as possible. Depending upon the device loading, the number of snapshots taken may not reach the number you specified.

Pre-Buffer Time: This is only used by video. If this is set to more than 0, the IP device will start to buffer video in its internal memory. The maximum pre-buffer is 3 seconds. When an event requires video upload, the IP device will first upload the video taken right before the event and then keep uploading until it reaches the upload time.

Image File Name/Upload Path: Specify rule for file names and upload paths (*upload path is not needed for Email; enter a slash "/" in the field). The rules contain flexible parameters. A sample rule and corresponding filename will look like this:
Front_Door_%YYYY_%MM_%DD@%hh%mm%ss
Front_Door_2009_10_12@195037.JPG

Upload Path folders may also be named dynamically. For the IP device to create folders on FTP and HTTP CGI servers properly, the FTP/CGI account will need to have permission to create folders. For syntax on auto naming, refer to Appendix A.

The symbol "%" cannot be the first character in the filename or upload path; use either an alphabet letter or a number as the starting character. For Upload Path, be sure to start and end with a backslash"\". An example would be: \Backgate%MM%DD\

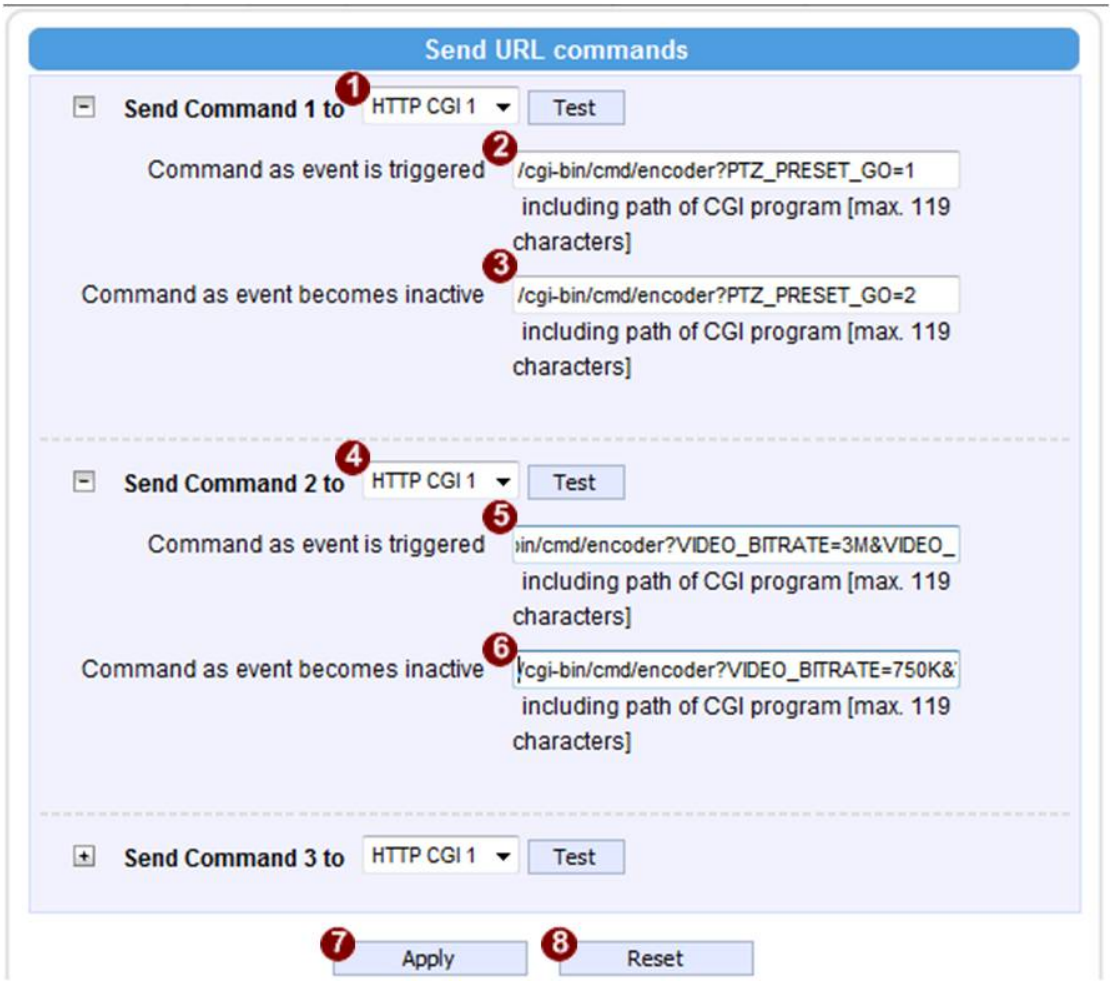
CGI Path & Program: Some CGI servers may require special info and settings. IP devices do not allow upload of Snapshots/Video into their embedded CGI servers.

E-Mail Recipient/Subject: When uploading video/snapshots via email, enter the email addresses of all required recipients.

Video Source: Choose the video source from video 1 or video 2. Refer to Appendix A for details on auto-naming.

Send URL commands

*Pre-requisites: **HTTP CGI server setup.**

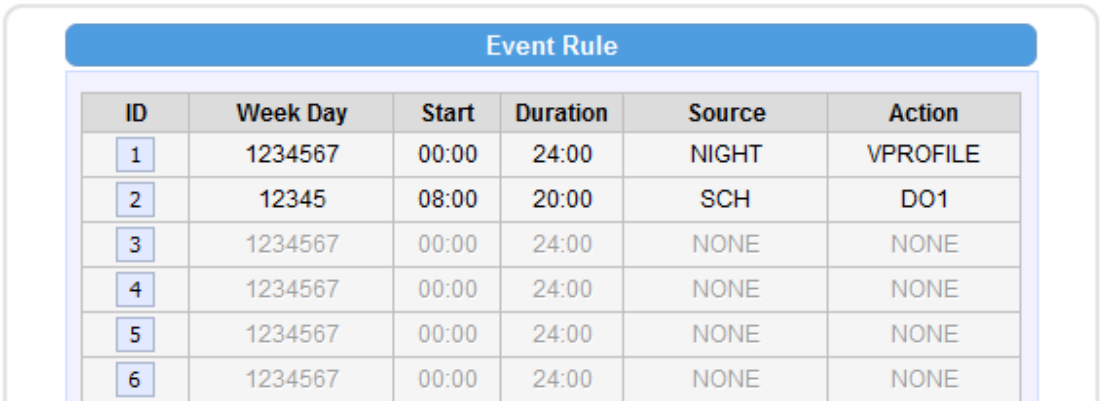


URL commands can be sent to HTTP CGI servers upon event. This provides the possibility of highly intelligent response upon event. IP devices and many other devices also have embedded CGI servers that can be controlled.

When Event Handler sends a URL command, it will send one set of commands when the event is triggered and another as the event becomes inactive. Depending on the CGI design, the URL commands may be able to be strung together, so multiple commands may be issued in a single line.

Event List

A maximum of 10 event rules can be defined, which will be shown in abbreviated form in the Event List panel. For each Event ID, the following will display: the days of the week it will be active, the start time and duration of the active period, the type of the source of trigger, and the actions used in the response. If the row is grayed out, this means the rule is currently not enabled and stays inactive.



Event Rule

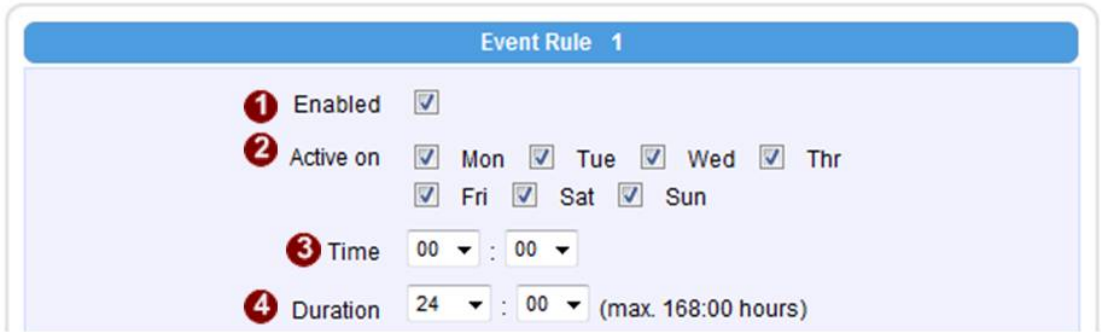
ID	Week Day	Start	Duration	Source	Action
1	1234567	00:00	24:00	NIGHT	VPROFILE
2	12345	08:00	20:00	SCH	DO1
3	1234567	00:00	24:00	NONE	NONE
4	1234567	00:00	24:00	NONE	NONE
5	1234567	00:00	24:00	NONE	NONE
6	1234567	00:00	24:00	NONE	NONE

There are several parts to the Event Rule:

When is it active?

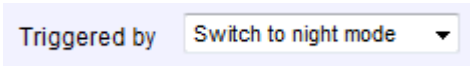
Click on the ID number to display the configuration screen below. Choose to enable the rule or not ❶. The settings will be kept in internal memory even if the event rule is disabled. Select the days in a weekly cycle ❷ on which this rule and schedule is active.

Determine the ❸ start time and ❹ duration of the active period. For example, a rule that lets motion detection trigger snapshot upload to FTP would only take place after 19:00 each day for 12 hours. Outside of this time the rule will not be active.



How is it triggered?

Events may be triggered by several sources; select trigger from dropdown list:



You may also ask the event to be repeatedly triggered during this scheduled time. The interval is determined in the Once Every field, entered in minutes. You may use this with email/FTP upload to take snapshots at regular intervals.

Scheduler: The IP device may trigger a device set in a schedule. The schedule is defined in the Event Handler with Local Storage.

DIs: The IP device may be triggered by Digital Inputs.

Motion: You may trigger the event if one or more Motion Detection regions encounter a motion trigger. Triggers from any of them will initiate the event. The duration of the event will be the same as the MD trigger length, or the Trigger interval time, defined in the Motion Detection section on the Video page.

Switch to night mode: This is available to selected models only. When camera changes between day and night modes, the embedded event handler will notice this change, and may act upon this information.

Potential uses include changing the motion detection profile to another set of Event MD parameters. By having two sets of parameters, each optimized for day and night, this provides better overall accuracy in both day and night conditions. Some night time only MD regions may also be activated this way. The event period will end when the camera returns to day mode, which will then reset the camera to the original settings.

Device boots successfully: This will trigger the event responses once the device boots up. You can use this to create a notification system that keeps record of when the device has been rebooted via email.

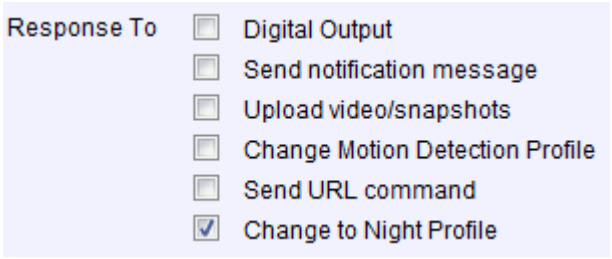
Reboot device: This triggers the event response when the device is shut down via web UI "Save and Reboot". Use this to keep record of when the device settings were edited. Note that this will not take effect when the device is unplugged, as this is not normal shutdown.

Run out of storage space: This triggers the event response when the device runs out of storage space, usually on the SD card.

Fail to write storage: This triggers the event response when the device fails to write the files to the storage location.

Remove storage media: This triggers the event response when the storage media has been removed from the device.

What responses will occur?



Digital Output: This is a useful link to other devices. Click to include this in the response for this rule. There are two DOs available.

Send notification message: Select from the three pre-defined messages that are setup in the Event Configuration section. You may enable multiple messages at the same time. For sending email, limit the recipient to one per event rule. If you need to send email to more than one recipient, use separate event rules triggered by the same trigger.

Upload video/snapshots: Select which of the event configurations to include in this response set. If you are sending email via upload video and sending notification message at the same time, the system will automatically merge the two emails into one. The subject and image will be based upon the Upload Snapshot Event configuration enabled, but the message in the body text will be based upon the Notification messages.

In general, use the "one email per event rule" limit for best performance. There are three images available.

Change Motion Detection Profile: This will switch the profile of the selected Motion Detection region from Runtime profile to Event profile. The profile will return to runtime settings at the end of this event. You may program one motion detection region to be disabled at runtime, but enable it with Event Handler under certain circumstances. There are three regions available.

Send URL command: Select the URL command to include in the response set. Two different commands will be sent at the time when the event is triggered and untriggered. There are three UTLs available.

Change to Night Mode: Force the camera into Day or Night mode. The camera will return to its previous setting (whether auto or forced day/night) upon the end of the event.

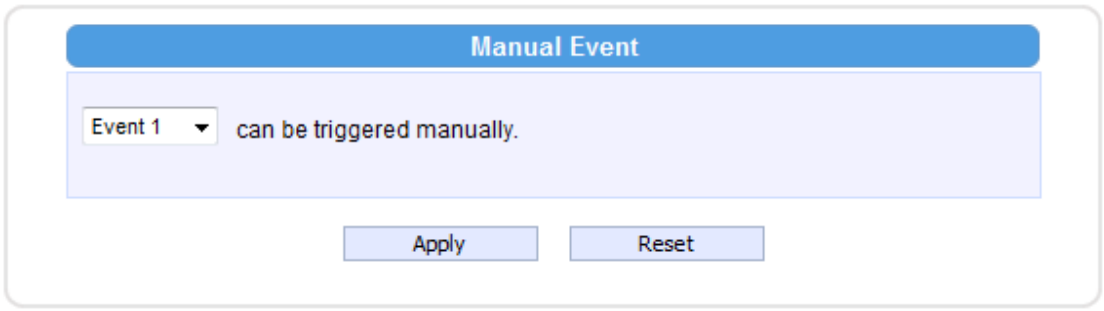
If the device is in ePTZ mode and the GoTo Preset Event Configuration is setup, go to a preset; then you may include this in the response section of the event rule. The camera will return to the position right before the event starts when the event is untriggered.

Click [Apply] to use these settings or click [Reset] to clear changes. Click the red X to close the screen.

Be sure to do Save & Reboot after you've updated the event settings. Only then will the settings be committed to physical memory. You may lose the settings to power loss or other situations if you do not do this step.

Manual Event

You may select one event from the Event List in the Manual Event area to be triggered via web User Interface (UI).



Once selected, the trigger button on the Live video display screen will display as clickable. Click to trigger the selected event. This is useful during event rule testing.

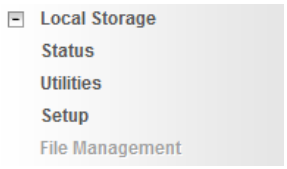
Click [Apply] to use these settings or click [Reset] to clear changes.

Local Storage Management

The V9360 Series devices come with built-in local storage capability; the [Local Storage] item is shown in the Setup page when the mass storage has been inserted into the storage drive slot of the device card not included).

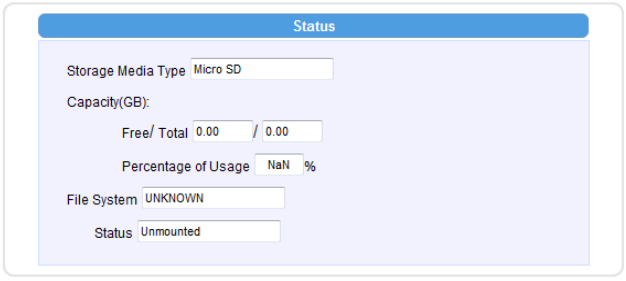
Under [Local Storage] item it is possible to manage the storage itself and the files that are stored there. In order to define the schedule or event rules that initiate or stop the recording process onto local storage, refer to the chapter Event Handler with Local Storage on page 78.

Click the ⊞ [Local Storage] item on the Setup page. There will be a list of 4 items – Status, Utilities, Setup and File Management. If the inserted mass storage has not been formatted or mounted yet, the File Management item is grayed out and cannot be accessed.

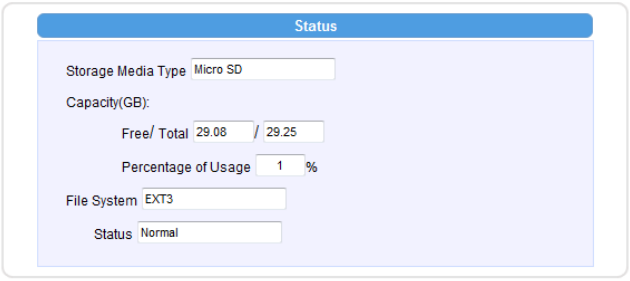


Status

When the mass storage has not been formatted or mounted yet, the camera does not know the status of the storage; the output would be as follows:



If the mass storage has been already formatted or mounted, the Status page will show the details of the storage:



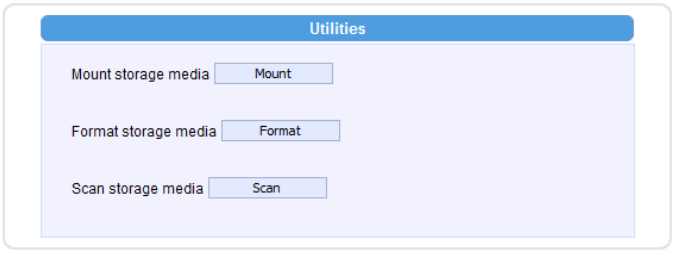
For IP cameras with Micro SDHC, the Storage Media Type will show "Micro SD".
For a video encoder with 2.5" SATA hard disk, the Storage Media Type would show "HDD".

The capacity of the disk is shown in Gigabytes.

The file system is Linux-based EXT3, which is different from Windows-based PC file systems. If you remove the storage from the camera and plug it directly to Windows-based PC, it may not be able to read its content. The File Management chapter explains the correct ways of accessing files of the local storage.

Utilities

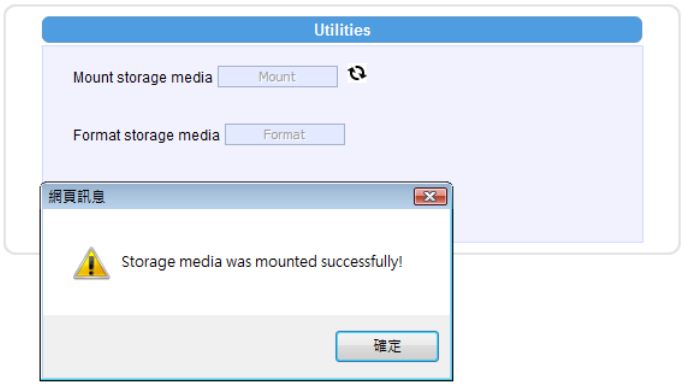
The Utilities are responsible for managing the storage itself, not the files on the storage. There are three utilities – Mount, Format and Scan.



Mount

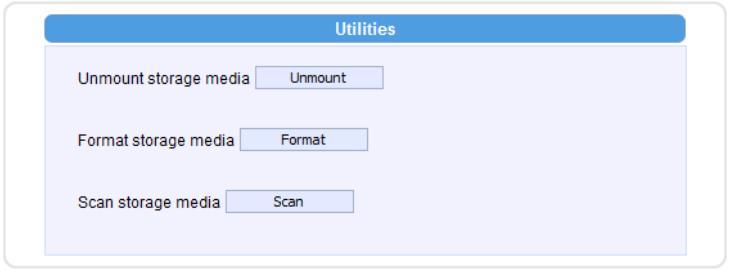
When the Mount storage media button displays Mount button, this means that the mass storage has been inserted into the camera, but the connection between camera and the storage has not yet been established. By pressing the Mount button, the storage becomes active. It is then possible to check the Status of the disk, write or read data on the disk, and remotely access the storage by Web Configurator or FTP client, etc.

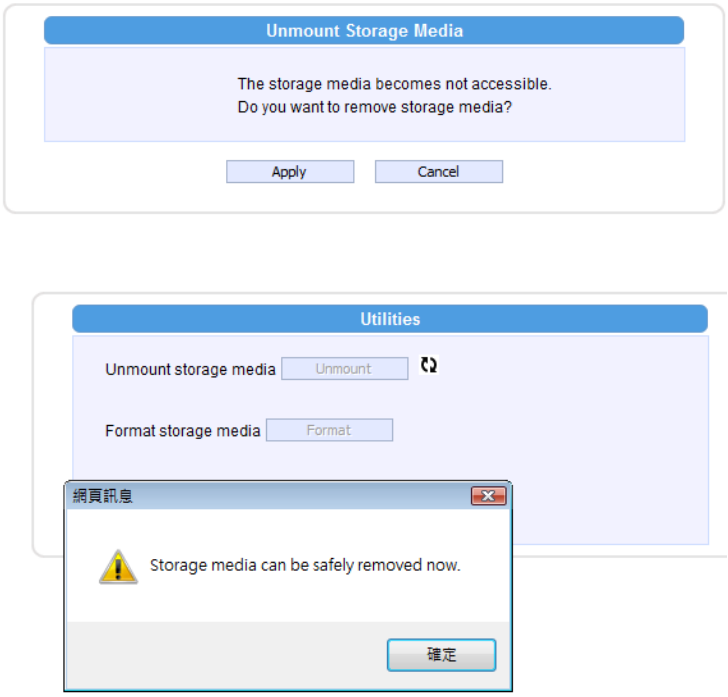
After pressing the Mount button, the mounting process will begin.



Unmount

Once the drive has been mounted, it can later be unmounted (removed) by pressing Unmount button, if necessary.

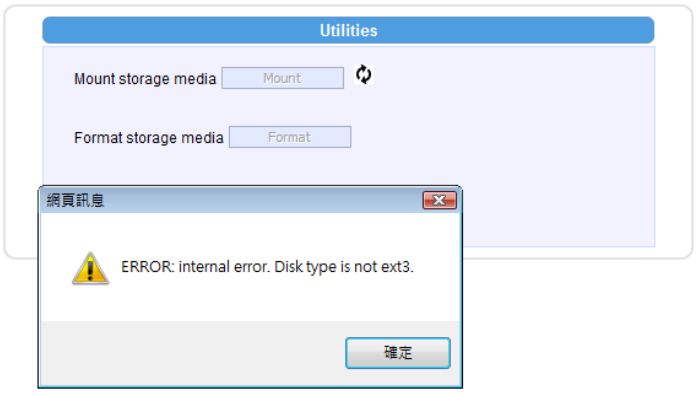




That Unmount function is used when the camera is to be shut down for maintenance or when the mass storage has to be physically removed for some reason. The purpose of unmounting is to protect the currently processed data on mass storage at the moment of removal of the storage. If the local storage is being used by the camera and some videos or snapshots are being recorded to the disk, then the sudden shutdown or removal of the disk without unmounting may corrupt the file that is currently being used by the camera. The rest of the files are not influenced in any way. Note that "Save&Reboot" function of the camera also does unmounting automatically for the user.

Mount Failure

If the inserted disk's file system is not EXT3, then the Mounting would fail, as follows.

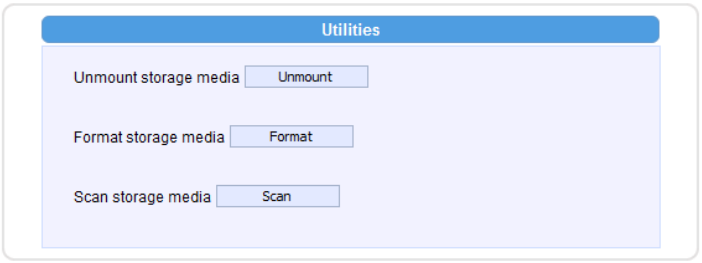


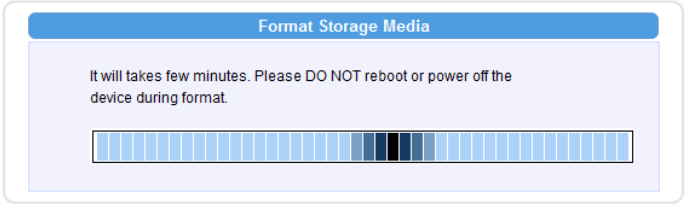
The common reason is that the disk may have been used previously in other file systems, such as Windows-based PC or photo camera. If the disk does not have the right file system, then you

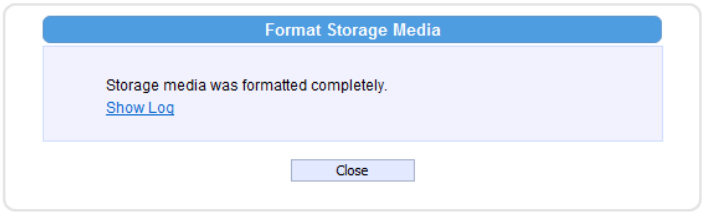
will get the error message above. In that case the disk has to be formatted first. A convenient formatting function is provided within Web Configurator.

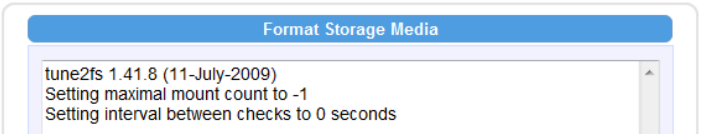
Format

When the disk is inserted into the camera for the first time, it is recommended to format it to make sure the file system of the disk is compatible with camera. Press the Format button to format the disk.



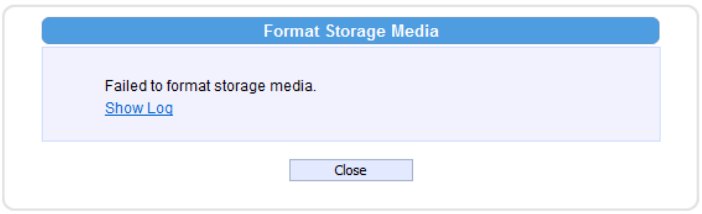


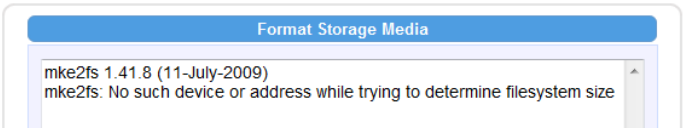



Format Storage Media
tune2fs 1.41.8 (11-July-2009)
Setting maximal mount count to -1
Setting interval between checks to 0 seconds

Format Failure

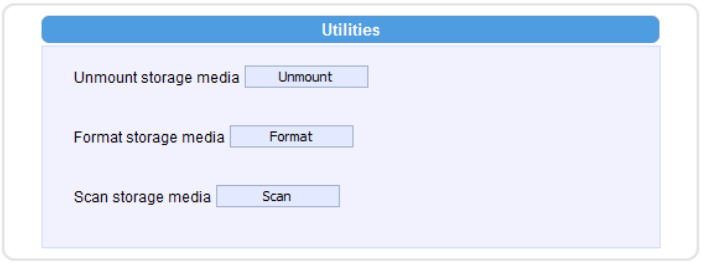
If the disk is damaged or is not within the specifications of the camera, the formatting may fail. When this happens, there is no way to continue using that disk, and it has to be replaced with a proper one.

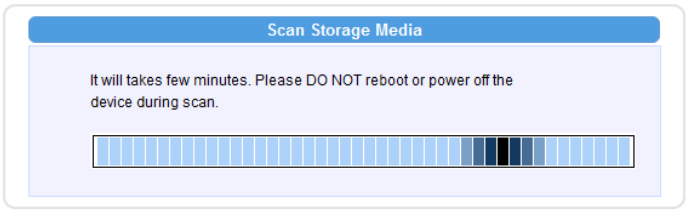


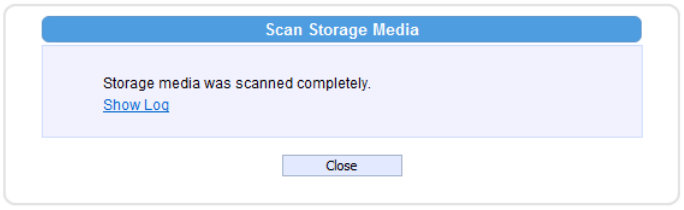

Format Storage Media
mke2fs 1.41.8 (11-July-2009)
mke2fs: No such device or address while trying to determine filesystem size

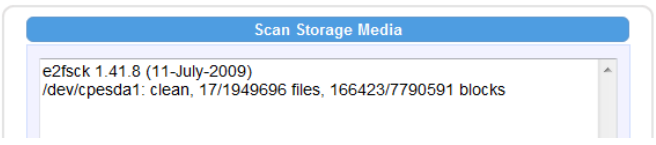
Scan

To check the health of the disk, use the Scan function. Press the Scant button to begin the process.



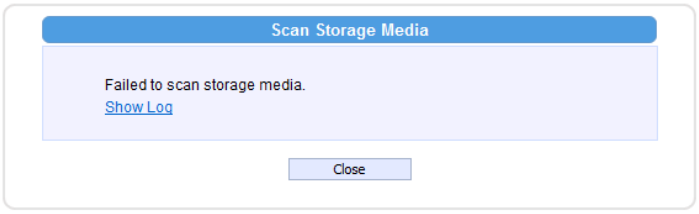


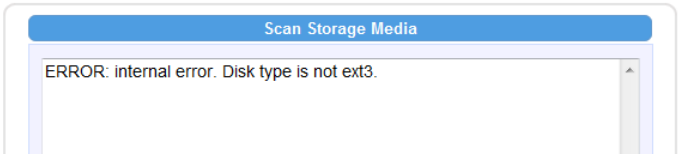




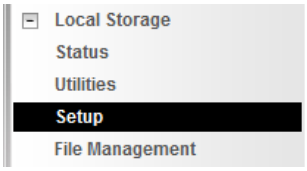
Scan Failure

The scanning would fail if the disk is not recognized by the camera. Make sure that the disk has been properly formatted and mounted to the camera.

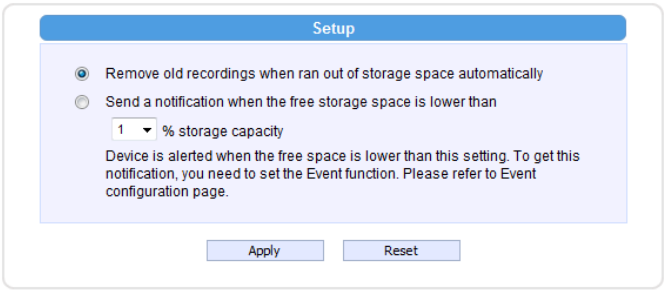

Scan Storage Media
Failed to scan storage media.
Show Log
Close


Scan Storage Media
ERROR: internal error. Disk type is not ext3.

Setup

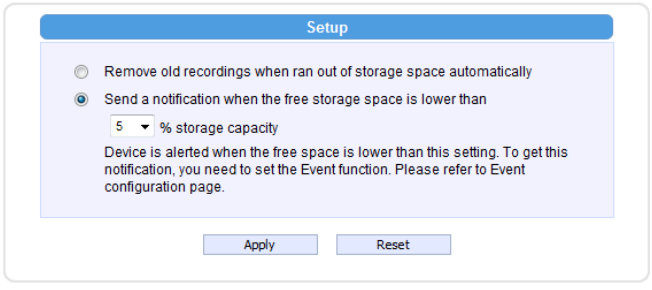


The Setup function provides the option to manage the file writing behavior of the camera. By default, the camera is set to "Remove old recordings when ran out of storage space automatically." By using this mode, the camera's recording process will not be interrupted when the disk becomes full – the oldest files will be overwritten by new recordings.


Setup
Remove old recordings when ran out of storage space automatically
Send a notification when the free storage space is lower than
1
% storage capacity
Device is alerted when the free space is lower than this setting. To get this notification, you need to set the Event function. Please refer to Event configuration page.
Apply
Reset

Note that under this mode, there is a risk that important evidence may be deleted automatically over a period of time. Therefore, as long as this "recycling" mode is used, the user should download the critical evidence files from the camera before they are erased by the camera.

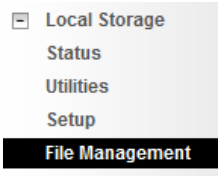
When the Send a notification when the free storage space is lower than… option is chosen, the existing files would not be overwritten by the camera and the recording process would stop when the disk is full.


Setup
Remove old recordings when ran out of storage space automatically
Send a notification when the free storage space is lower than
5
% storage capacity
Device is alerted when the free space is lower than this setting. To get this notification, you need to set the Event function. Please refer to Event configuration page.
Apply
Reset

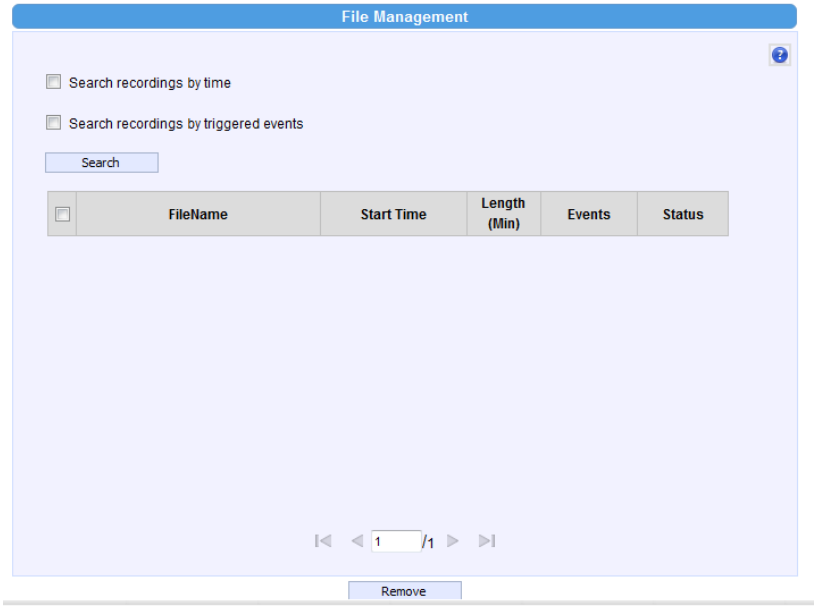
Using this option, the possibility of sending notification e-mails automatically has been enabled. The % refers to the remaining size of available storage at which the camera should send the notification e-mail, in case such task has been listed in Event Handler of the camera. To actually make the e-mail notification work, go to Event Handler (see "Event Handler with Local Storage" on page 78) of the camera and set up the event rule where the selected trigger type is "disk space is low." Click [Apply] to use these settings or click [Reset] to clear changes.

.

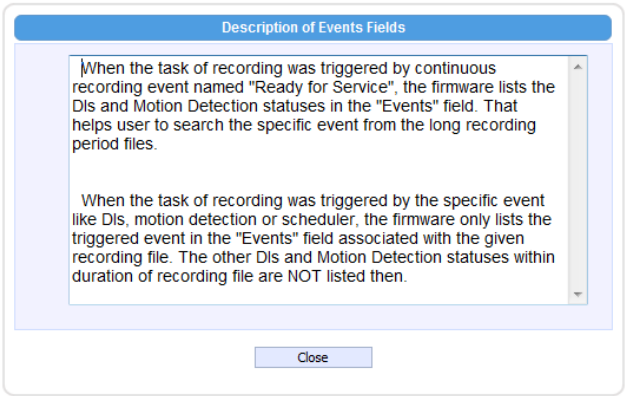
File Management



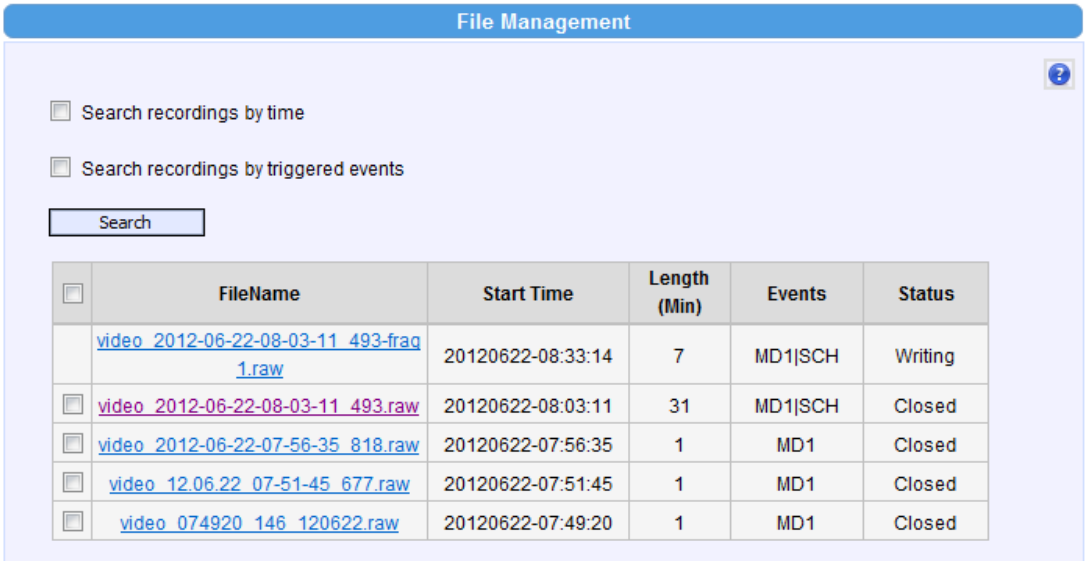
The File Management function is available only when the disk has been properly mounted to the camera. Before setup and use of camera, the File Management page would be empty because there are no files to be shown:



Clicking on the "?" mark on the upper right corner displays useful help message:


Description of Events Fields
When the task of recording was triggered by continuous recording event named "Ready for Service", the firmware lists the DIs and Motion Detection statuses in the "Events" field. That helps user to search the specific event from the long recording period files.
When the task of recording was triggered by the specific event like DIs, motion detection or scheduler, the firmware only lists the triggered event in the "Events" field associated with the given recording file. The other DIs and Motion Detection statuses within duration of recording file are NOT listed then.
Close

In order to let the camera record files either by event or by schedule, go to Event Handler to set it up (Event Handler with Local Storage on page 78). When the camera starts to record either videos or snapshots, you will be able to manage the files under File Management.



	FileName	Start Time	Length (Min)	Events	Status
	video_2012-06-22-08-03-11_493-frag 1.raw	20120622-08:33:14	7	MD1|SCH	Writing
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

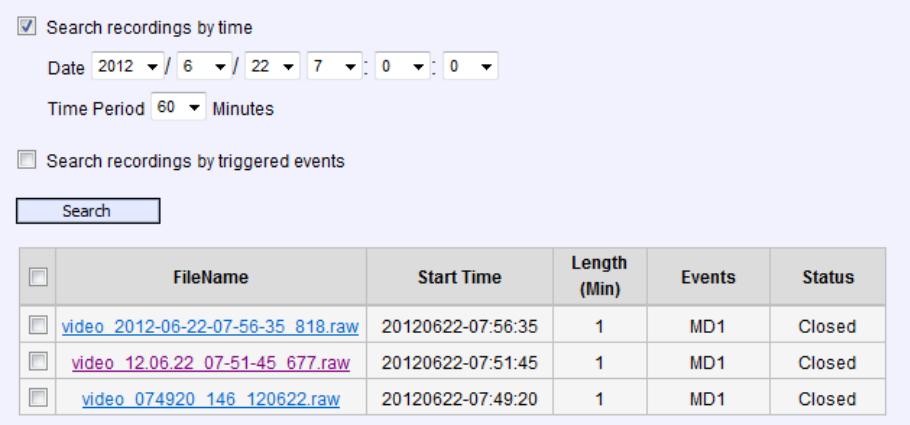
The largest possible recording file is approximately 30 minutes. The length of each file is listed in the file list. Length is not available for snapshots.

In continuous recording mode, the camera will make sure that the file size does not exceed 30-31 minutes – it would start writing a next file when the first file is full. There is also a way to force the continuous recording files to be a shorter length. This is explained in the Event Handler section on page 78.

The file that is currently being saved will show the status Writing.

Search Recordings by Time

When looking for the recordings of a specific time period, check the "Search recordings by time" and select the starting time of the searchable range as well as the length of the time period. Click the Search button.

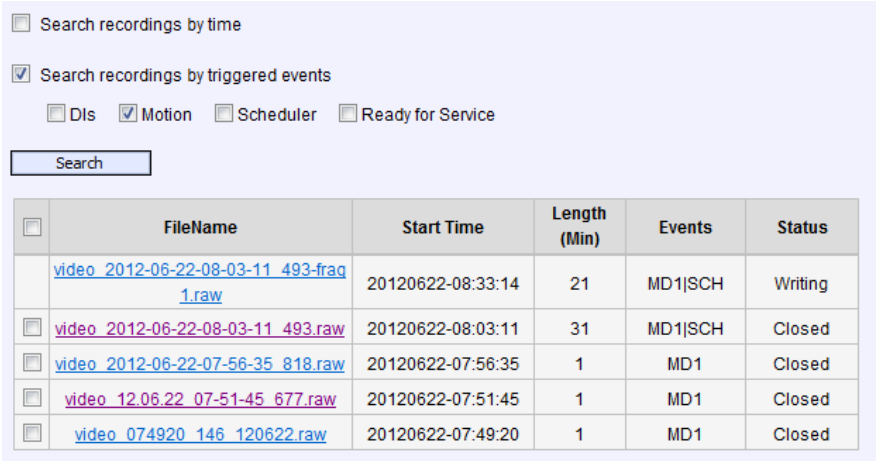


	FileName	Start Time	Length (Min)	Events	Status
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

With search settings above, only those files will be listed which were recorded between 2012.6.22 7:00 and 2012.6.22 8:00.

Search Recordings by Triggered Events

Another convenient way of searching specific recording files is to define the events that were either the triggers of the recordings or occurred during the scheduled recording. Check the "Search recordings by triggered events" and choose one of the 4 event types – DIs, Motion, Scheduler or Ready for Service. Click the Search button. All these events can be managed under Event Handler (see Event Handler with Local Storage on page 78).



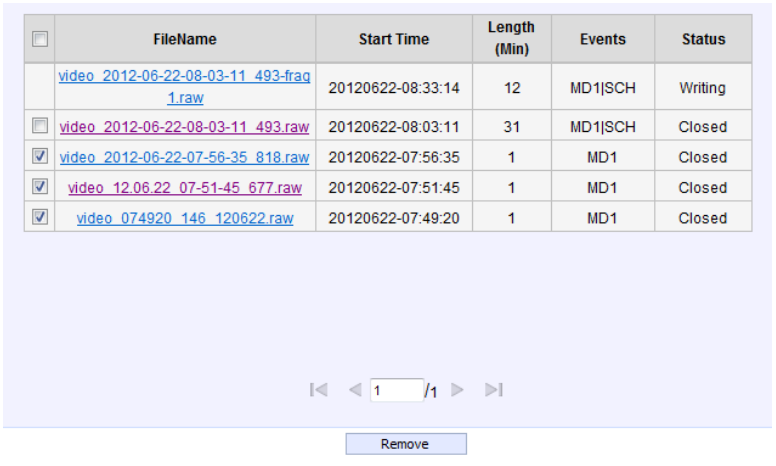
	FileName	Start Time	Length (Min)	Events	Status
	video_2012-06-22-08-03-11_493-frag 1.raw	20120622-08:33:14	21	MD1|SCH	Writing
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

Download Recordings

You can download the files manually to a remote PC by clicking on the File Name.

Delete Recordings

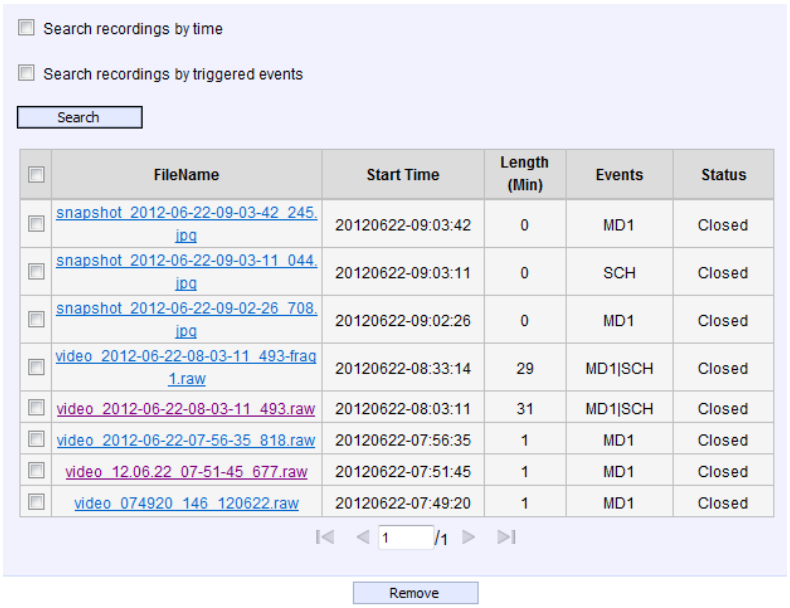
You can manually delete the files by checking the checkboxes and then pressing the Remove button.



	FileName	Start Time	Length (Min)	Events	Status
	video_2012-06-22-08-03-11_493-frag 1.raw	20120622-08:33:14	12	MD1|SCH	Writing
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☑	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☑	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☑	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

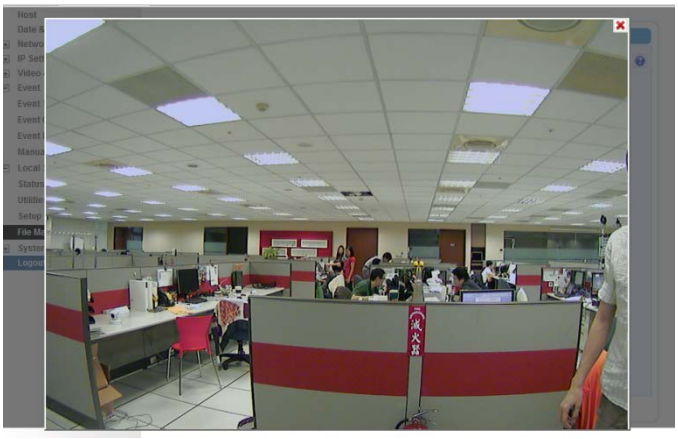
Search Snapshots

If the event rule of the Event Handler defines that there should be snapshots stored on local storage instead of video, then the snapshots will appear in File Management's file list. The extension of snapshot file is "jpg."



View and Download Snapshots

By clicking on the snapshot file name in file list it is possible to view the snapshot within Web Configurator. To download the snapshot, right click on the picture and save it to the computer.



Deleting Snapshots

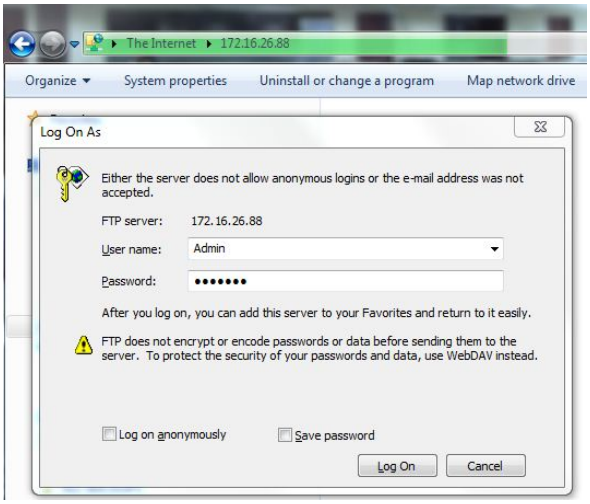
You can manually delete the snapshots by checking the checkboxes and then pressing the Remove button.

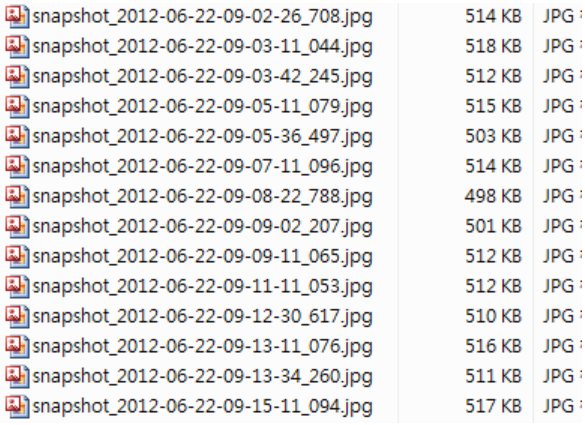
Special Rule!

When the event-triggered snapshot occurs during the video recording process, the camera will not save the snapshot to the local storage to avoid redundant information and waste of storage space, as the snapshot frame can be later extracted from video file.

Downloading Files by FTP Client

In addition to Web Configurator's File Management, it is also possible to use any of the FTP Clients to list and download the recordings from the local storage, since the camera has a built-in FTP Server. Use the ftp:// followed by camera's IP and then type the camera's account and password (default is Admin, 123456).


The Internet ▸ 172.16.26.88
Organize
System properties
Uninstall or change a program
Map network drive
Log On As
Either the server does not allow anonymous logins or the e-mail address was not accepted.
FTP server: 172.16.26.88
User name: Admin
Password: •••••••
After you log on, you can add this server to your Favorites and return to it easily.
FTP does not encrypt or encode passwords or data before sending them to the server. To protect the security of your passwords and data, use WebDAV instead.
Log on anonymously
Save password
Log On
Cancel



Notice! You may download files via FTP for your convenience, but do not delete any of the files via FTP; this would cause inconsistency between camera's file database and actual file availability.

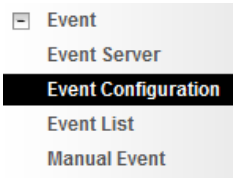
Event Handler with Local Storage

In order to save video clips or snapshots on a local storage, there has to be a task created under Event Handler system of the camera that defines the type of files and when they are to be recorded on local storage.

Event Handler supports the following Recording methods:

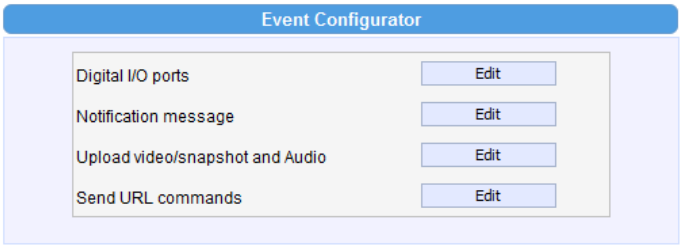
1. Event triggered video recording or snapshots (recommended solution)
2. Scheduled video recording (including non-stop recording) or snapshots

To set up the event handler rule, you have to configure both Event Configuration and Event List.

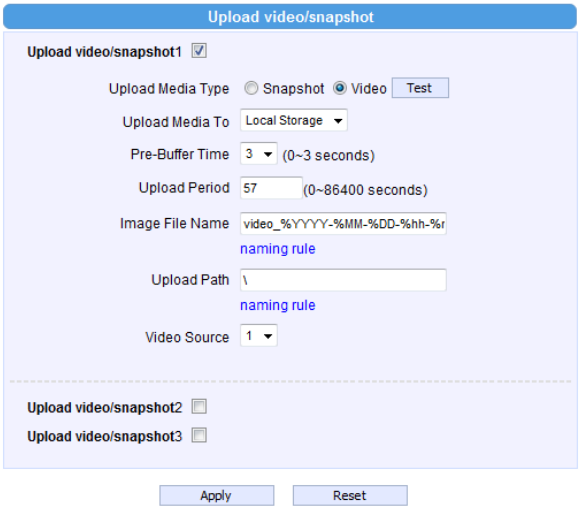


Event Triggered Video Recording

Under Event Configuration, define the type of media (video, snapshot) and its properties.



Select Upload video/snapshot and Audio to adjust the parameters of media.



Check the Upload Video/Snapshot1. Note that on the Scheduler page this item will be referred to as Image 1.

Here is an example of video format – Upload Media Type is Video; Upload Media To is Local Storage.

The camera has the capability to buffer up to 3 seconds of video at any time, so these 3 seconds of video can be included in the file to capture the moment right before the event occurred. With the settings of:

Pre-Buffer Time = 3

Upload Period = 57

the length of the video clip will be 1 minute.

You can choose any name for the file. Whatever name is chosen, the camera will automatically append milliseconds in the end. It is recommended to include day code in file name, so that when the files are later downloaded to a remote computer, it is easier to pick out the right video.

For example, you may consider using following file name:

video_%YYYY-%MM-%DD-%hh-%mm-%ss

where %YYYY displays current year, %MM displays current month, %DD displays current day, %hh displays current hour, %mm displays current minute and %ss displays current second.

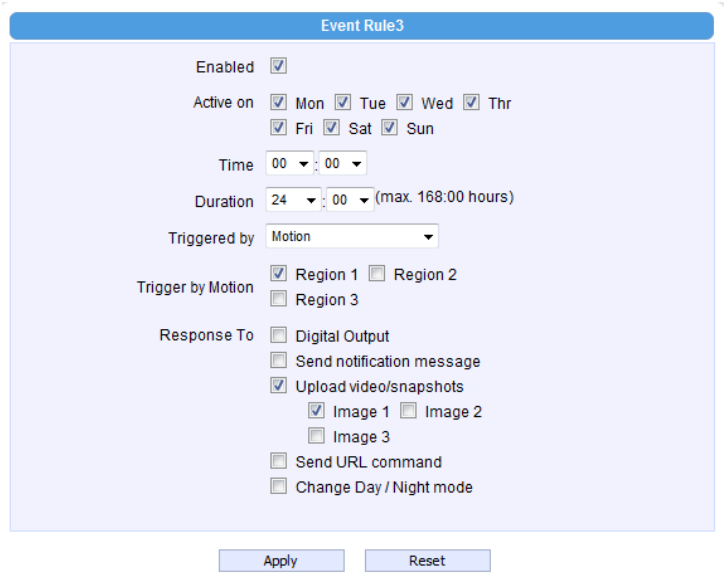
Notice: The camera uses its own date and time settings to write the file name, so make sure the camera's date and time are correct.

Upload Path can be simply "\", which means that the files will be saved in root folder of the storage.

The video source can be either 1 or 2. If you want to have different video parameters for remote NVR recording and Local Storage recording, consider adjusting camera's media 1 and media 2 settings accordingly and then choose the right video source in Event Handler page.

When finished, press [Apply] and move on to the Event List and pick any of the empty spots in the list of rules to create a new rule or click [Reset] to clear changes. In our example, we pick the rule 3 for setup.

Make sure to have the rule Enabled by checking the checkbox.



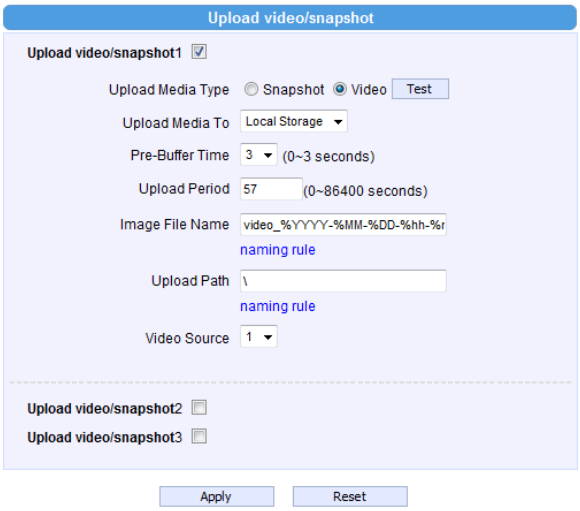
In the example above, the camera will be 24/7 on guard to watch for motion events. When motion detection region 1 detects intrusion, it will trigger the response of uploading Image 1 according to the parameters previously defined under Event Configuration, that is, whenever motion occurs, the camera will record 3 seconds of video before the moment of motion detection and 57 seconds after that. The video file can then be found under Local Storage" -> "File Management.

Click [Apply] to use these settings or click [Reset] to clear changes.

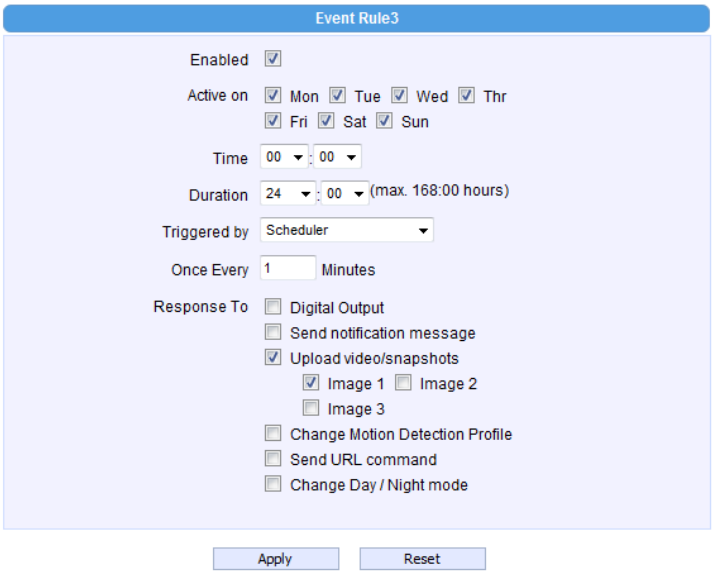
Scheduled Video Recording

Although it is not really recommended to have full-time recording for Micro SDHC, due to the amount of storage space, the firmware will allow it to be configured for full-time recording mode.

Using the same media parameters as in previous example: Since the time unit of event rule is minute based, make sure that the media settings (in seconds) add up a round number in minutes. In this case, 3+57 seconds is exactly 1 minute.



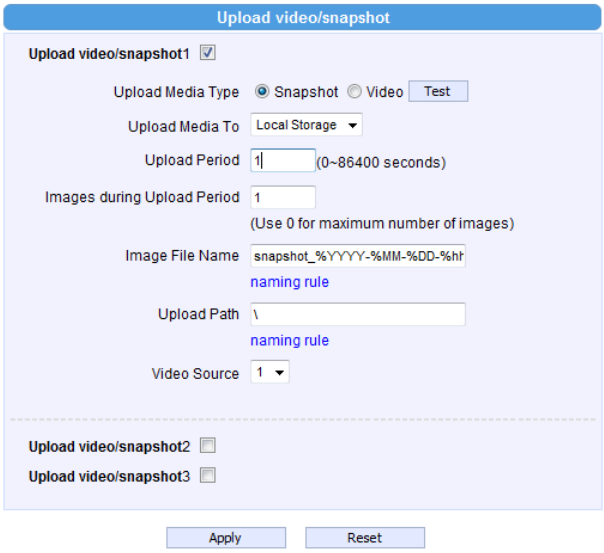
In the event rule page, choose Trigger by Scheduler and choose Once Every 1 Minute. The rest of the items are the same as in previous example.



As a result, the camera will be continuously recording, having each video file with a length of 1 minute.

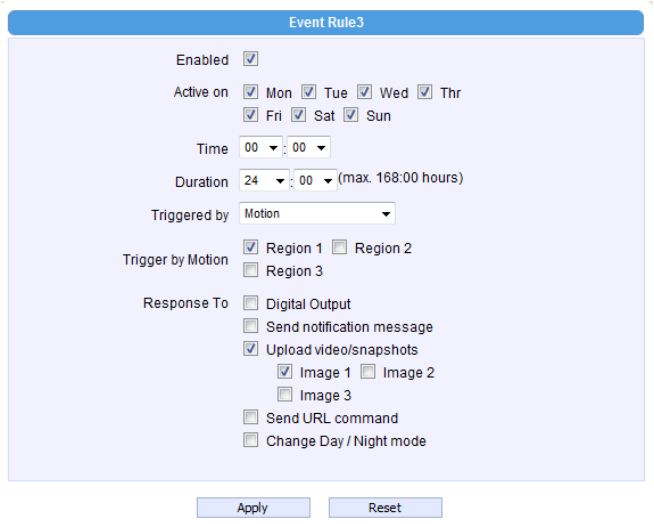
Event Triggered Snapshots

Choose the Upload video/snapshot item in the Event Configuration page and check the Upload Media Type as Snapshot if you want to save images to camera's local storage.



With the settings above, it would create 1 snapshot within 1 second from the moment of triggered event using following file name snapshot_%YYYY-%MM-%DD-%hh-%mm-%ss.
The naming rule of the file is similar to the video files. Video Source can be either 1 or 2, depending on customer's requirements. If you want VGA snapshots on Local Storage while NVR is getting megapixel video stream, you can configure Media 2 as VGA and set Video Source as 2.

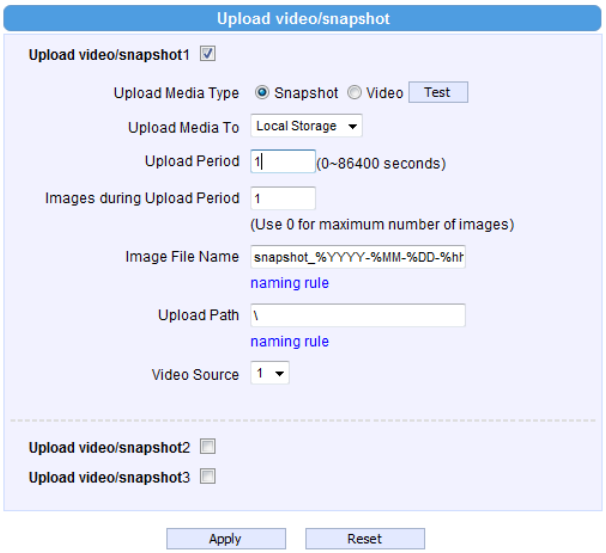
The event rule can be the same as in case of video upload:



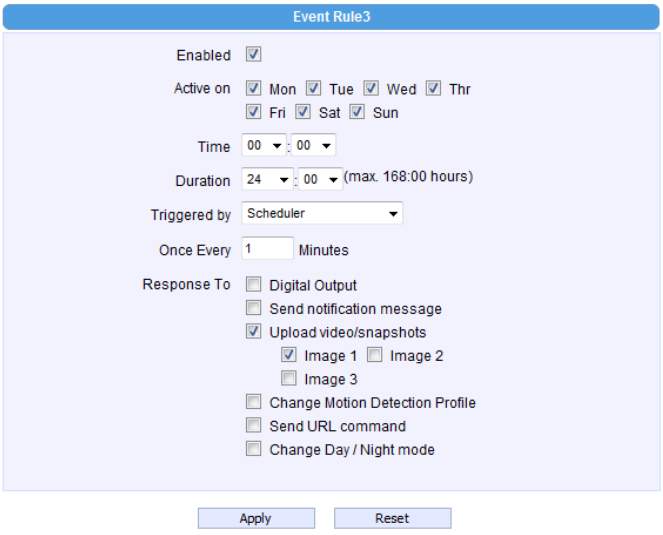
Click [Apply] to use these settings or click [Reset] to clear changes.

Scheduled Snapshots

Media configuration:



Schedule configuration:



As a result, there will be one snapshot from Media 1 stored on Local Storage once every minute, 24 hours a day. The snapshots can be accessible from Local Storage -> File Management.

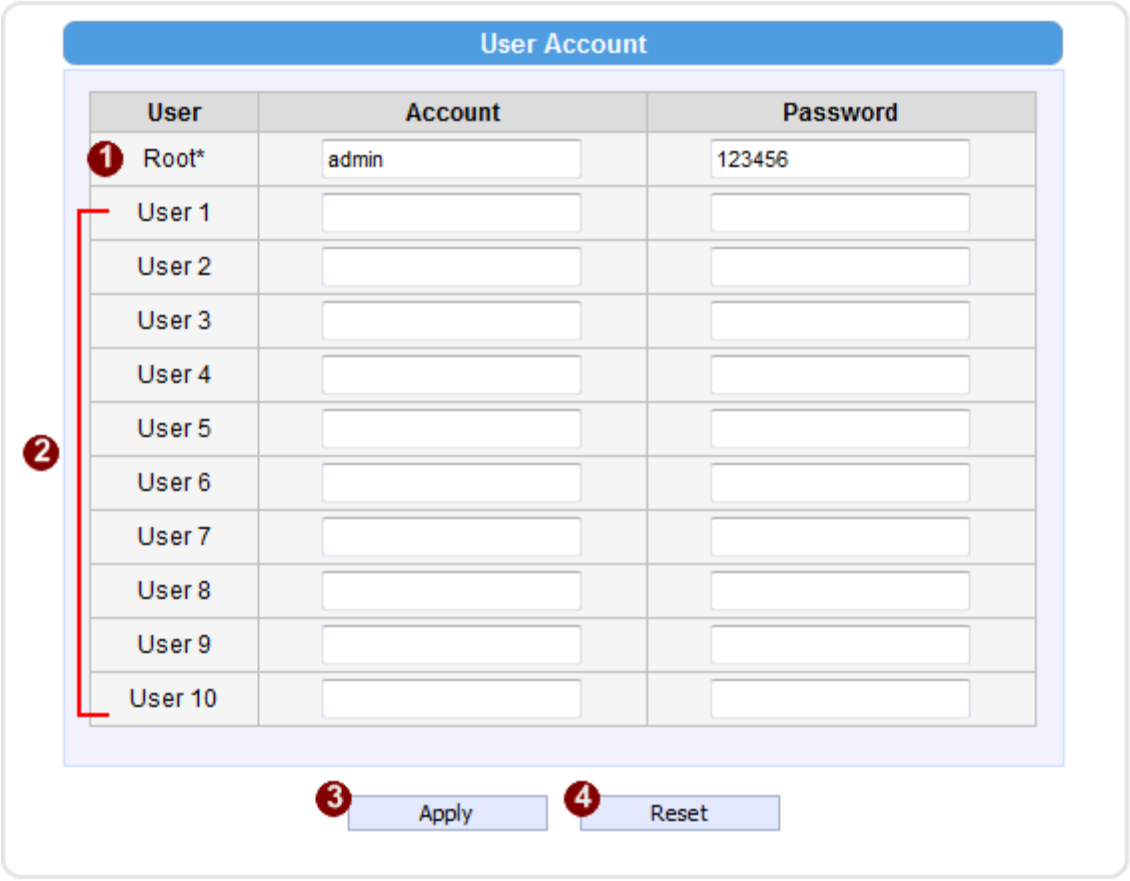
Click [Apply] to use these settings or click [Reset] to clear changes.

System

Click the [System] item on the Setup page.

User Account

Click the [User Account] item to display the User Account setting page.



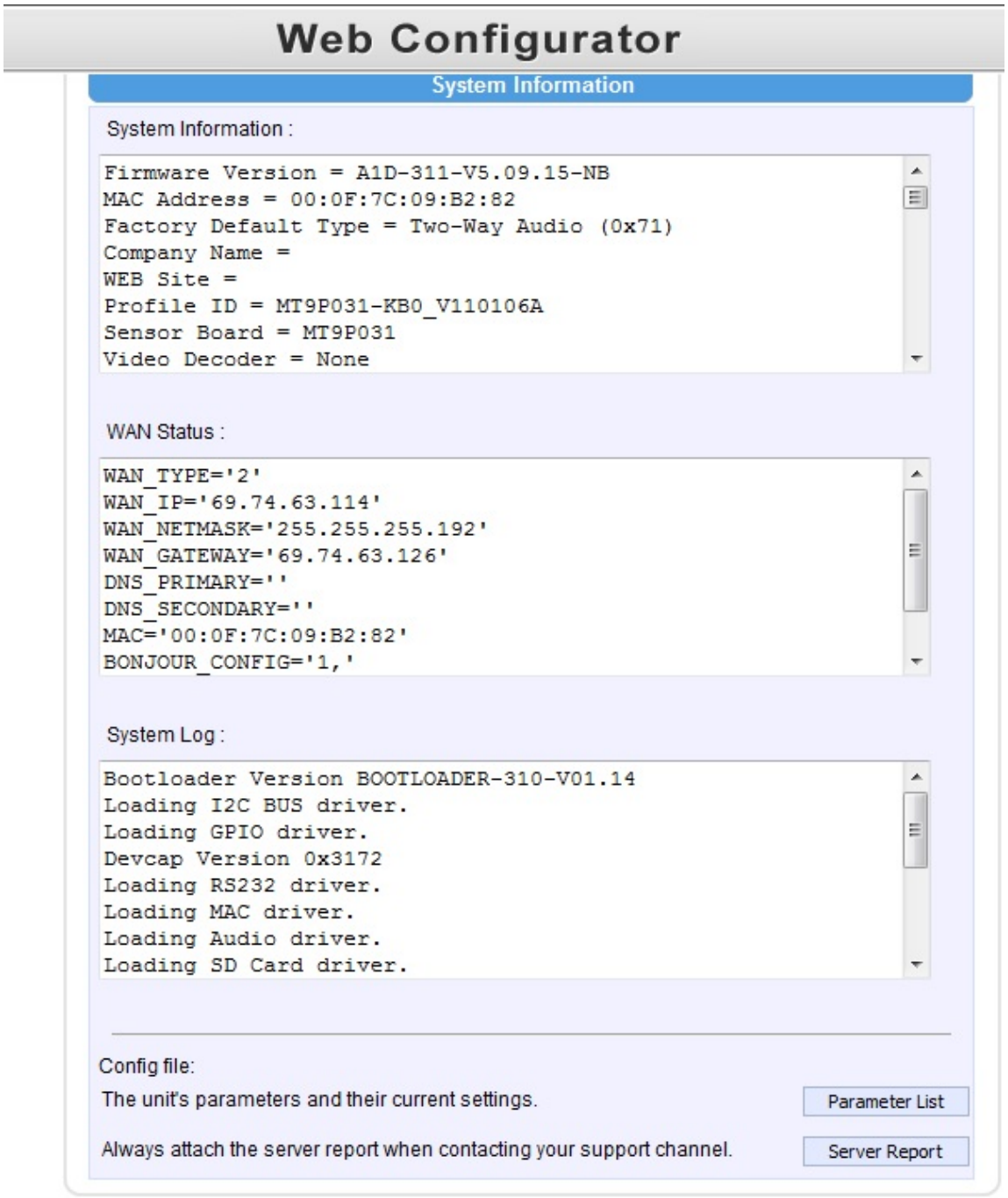
Setup the account names and their passwords. There are 1 root ❶ (administrator) account and 10 common user accounts ❷. Administrator account allows the user to watch the live view and do all setup functions setup; but common user account allows user only to watch the live image.

Click the ❸ [Apply] button to confirm the settings or click the ❹ [Reset] button to re-enter the parameters.

System Info

Click the [System Info] item to show details about this IP device, including system information, WAN status and system log. Refer to the table below for how to configure each setting.

View the information in the 3 textboxes. This information is very useful to understand the IP device status and for troubleshooting any problem that might occur.



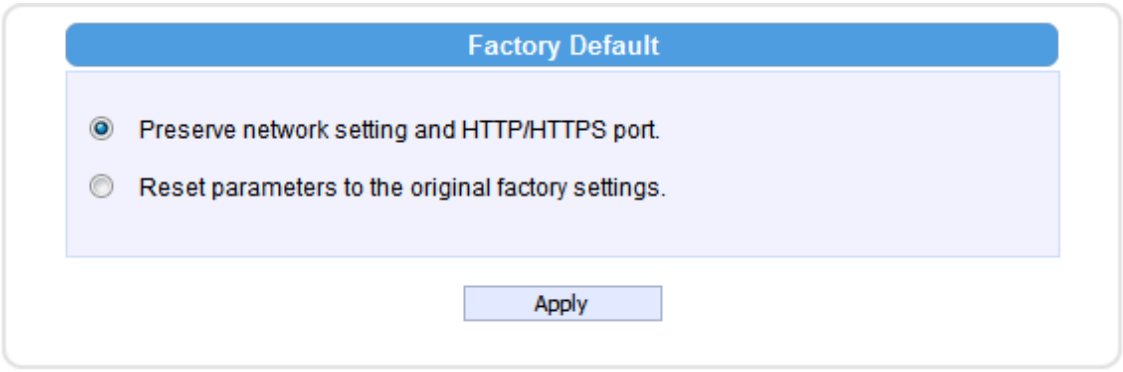
Column	Description
System Information	Shows the firmware version, MAC address, production ID and factory default type of IP device.
WAN Status	Shows the WAN port's IP address, netmask, gateway, DNS server, DDNS host and connection status.
System Log	Shows the system event. This is very useful as a diagnostic tool. At the bottom of this area is the ISP firmware version, a useful diagnostic parameter.

Click [Parameter List] to see all configurations of the IP device.

Click [Server Report] to export related information for reporting to your support channel.

Factory Default

Click the [Factory Default] item to display the Factory Default page.

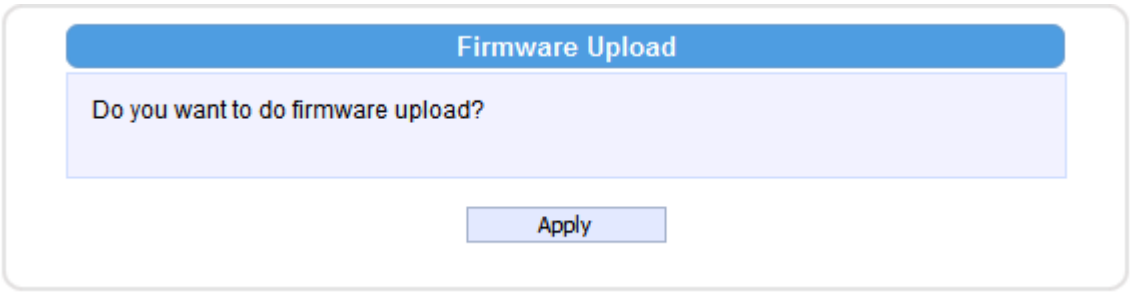

Factory Default
Preserve network setting and HTTP/HTTPS port.
Reset parameters to the original factory settings.
Apply

If you want to keep network settings and restore other settings to factory default, select the first option. If you select the second option, all the settings would be returned to factory default. You will have to use factory default IP setting to connect to this camera. Refer to previous login section.

Click the [Apply] button; a warning dialog will display that reminds you again before restoring the device to factory default.

Firmware Upload

Click the [Firmware Upload] item to display the Firmware Upload page. The IP device's firmware can be upgraded from this page. You may upgrade firmware for individual cameras with this function. To upgrade camera firmware in batches, use the IP Utility, which can be downloaded from the website. The firmware file you download will contain one .upg file and one .md5 file. Uploading firmware through Web Configurator uses only the .upg file. You will need both files if you are doing multiple upgrades with IP Utility.



Click the [Apply] button. The Firmware Upgrade page-2 will display as below.

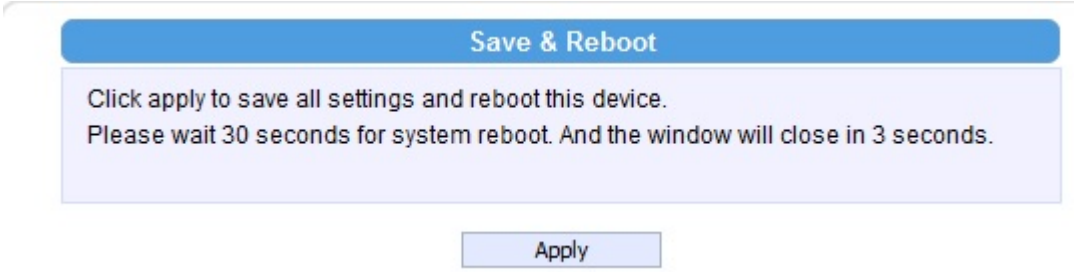
Click [Browse] to select the upgrade image file. The latest version is available on the website. Click the [Apply] button to start upgrade. The upgrade process window will show a progress bar indicating upgrade status.

Once the process is finished, you will get an OK message and system will reboot itself.

NOTE: If you cancel the firmware upgrade during upgrade process, the browser window will be closed.

Save & Reboot

This section tells you how to save all the settings and reboot this IP device. This is critical because some settings only take effect after save and reboot. Click the [Save & Reboot] item to display the Save & Reboot page. Click Apply.


Save & Reboot
Click apply to save all settings and reboot this device.
Please wait 30 seconds for system reboot. And the window will close in 3 seconds.
Apply

The Action LED indicator will go dark to indicate that the IP device is rebooting. After about 30 seconds, the Action LED will light up again to indicate that the reboot is completed.

Logout

Clicking [Logout] item logs out of the IP device and returns to the login screen. Be sure to logout of this IP device once your setting is completed.

Appendix A

This Appendix provides some details on certain features that can be configured in the web interface.

HTTP Server

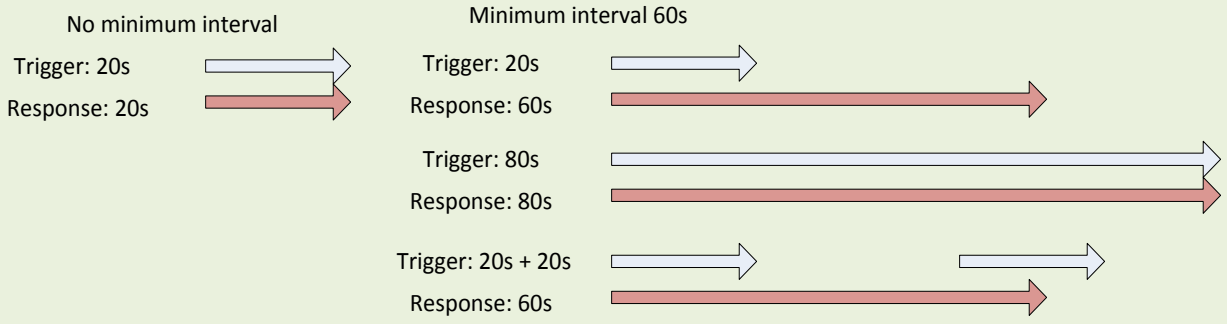
IP devices are also HTTP/CGI servers. This means that IP devices can now issue commands to each other, which creates endless possibilities for highly coordinated response. The IP device can also give a loopback command to itself, in effect changing almost all possible settings dynamically. For detail on the commands used to control the cameras, contact your customer representative.

An example will help to give a better sense of how to utilize this unique function. Camera A is a fixed camera that looks at a corridor leading to the main hall. It has a motion detection window located near the point where the corridor arrives at the large hall. Camera B is a PTZ camera located in the hall, which is usually left on auto-tour patrol. When motion activity in the motion detection region triggers MD1 in Camera A, this then in turn activates an event rule in Camera A that gives out a command to Camera B. Camera B would then swivel to the preset point where the corridor leads into the entrance and switch to higher bit rate to temporarily provide clearer image. After the event ends, Camera B will go back to its normal routine in lower bit rate.

Digital I/O ports

Trigger Interval: How does it work?

When motion is detected or the device receives a DI trigger, usually users want the camera to stay on high alert for a minimum duration of time before returning to normal mode. This duration is controlled by setting the ***trigger interval*** value. During this time, the device will NOT respond to a second trigger. The device will stay in the triggered state for as long as the trigger continues to be effective, so the trigger interval only limits the minimum amount of time the device will spend in the triggered state. Below are sample diagrams on trigger-response mechanism.



Upload Video/Snapshot and Audio

Auto Naming Rules for Files and Folders:

To properly track images and videos, a well thought out naming rule is necessary. There are a number of automatic variables available to design a proper naming system, which may be used both on files and folders.

Symbol	Description	Example
%YYYY	4 digits for year	2009 for year 2009
%YY	last 2 digits of 4 digits year	09 for year 2009
%MM	two digits for month, 01~12	01 for January
%DD	two digits for date, 01~31	01 for the 1st day of a month
%hh	two digits for hour, 00~23	
%mm	two digits for minute, 00~59	
%ss	two digits for second, 00~59	
%W	a space character	' '
%N	camera name	camera-1
%Y	File serial counter. This starts from 1 in every uploading task. The counter will be increased by 1 for next uploading file.	1,2,3,4,5,...

Send URL commands

For example, when the access control device at the entrance detects an entry, this device provides a DI signal to the PTZ camera and triggers an event. This event then sends a loopback command to the PTZ camera itself (by setting its own IP as the HTTP CGI server). The PTZ camera then moves to a preset location, stays until the event is over, then move back to another location. At the same time it moves to the preset location, it increases the bitrate from 750k to 3M, and the frame rate from 4 fps to 8 fps. The bitrate/fps changes are reverted at the end of event.

Vicon Industries Inc.

Corporate Headquarters
89 Arkay Drive
Hauppauge, New York 11788
631-952-2288 800-645-9116
Fax: 631-951-2288

Vicon Europe Headquarters
Brunel Way
Fareham, PO15 5TX
United Kingdom
+44 (0) 1489 566300
Fax: +44 (0) 1489 566322

Vicon Germany
Kornstieg 3
D-24537 Neumuenster
Phone: +49 (0) 4321 8790
Fax: +49 (0) 4321 879 97

Far East Office
Unit 5, 17/F, Metropole Square
2 On Yiu Street, Shatin
New Territories,
Hong Kong
(852) 2145-7118
Fax: (852) 2145-7117

Internet Address: www.vicon-security.com

VICON